

THE AMERICAN FARMER:

DEVOTED TO
Agriculture, Horticulture, and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." *Virg.*

Sixth Series.

BALTIMORE, MAY, 1868.

Vol. II.—No. 11.

MAY.

"Fairer and brighter spreads the reign of May;
The tresses of the woods
With the light dallying of the West wind play.
And the full-brimming floods,
As gladly to their goal they run,
Hail the returning sun."

Work for the Month.

It may be supposed that the breaking of all turf land, for whatever crop, is now completed. Otherwise let it be done as quickly as circumstances will allow, and do not neglect to close the seams with harrow or roller, to insure rotting the sod.

CORN CROP.

Hasten the necessary preparation for this crop, that it may be planted by the 10th, or at farthest by the 15th, on thoroughly worked soil. The growth will be quicker and healthier, and less liable to damage by insects, if the preparation be good.

Corn should never be planted without using tar for the protection of the seed from birds. It may be softened and thinned by pouring boiling water upon it—then into a peck of seed, stir in the tar until the grains be well coated. It will preserve the seed from both birds and insects, and also against decay, in case of long cold weather, after planting. It does not retard germination, as has been supposed.

Manures for this crop, as we have often suggested for all spring-planted crops, should be put on the ground at the earliest practica-

ble time, as they fail sometimes for want of rain enough to dissolve them.

Manure in the hill for corn should be some well-rotted compost, or a mixture of rich earth, ashes and plaster, a handful to the hill; a table spoonful of guano, mixed with a double quantity of dry earth and a little plaster; manure from the poultry house, with an equal quantity of plaster, pounded and mixed together with a bushel of salt to five of the mixture, a handful to the hill. Well prepared poudrette makes a good application for the hill, or a small handful of some good superphosphate. It is better and safer to make the application on top of the ground, immediately after covering. On rich or well manured ground, manuring in the hill is not necessary.

TOBACCO.

The leisure season after corn planting should be diligently used to get rid of the old crop of tobacco still on hand. Get all that may still be hanging, or in small, two-course bulks, packed closely in large bulks, and weighted heavily; from these bulks it may be at any time transferred to the hogsheads, and packed for market.

Let tobacco beds have constant care—picking them of grass whenever necessary, and following with a dressing of fine manure.

Towards the close of the month there may be a portion of the plants fit to set out. At so early a period, it will be advisable to plant out small plants, if they be thick in the beds and very abundant. The beds will, in that case, be benefited. If not plentiful, do not

plant small plants. No one not experienced in planting will realize the great advantage of well-grown plants over small ones, or the difference in the plant of a week's growth in the beds.

The most thorough working and preparation of the surface soil is especially necessary for this crop. If the soil be at all lumpy, harrow and roll again and again. This will save a great deal of hoe labor, and the advantage of a well pulverized surface will be very apparent in the setting of the plants, and, what is most desirable, a quick, early growth.

CLOVER FIELDS.

If clover be intended mainly for the benefit of the land, all stock should be kept from the field till the crop comes into bloom. Then a large stock may be turned on to trample it quickly, that it may lie closely to the surface and rot. The second growth will then come up early, and the ground will get the greatest possible good from the crop. If hay is to be made, stock must of course be kept off, and the clover cut when it is coming well into bloom. If the greatest amount of pasturage is wanted, there should be no delay in turning stock in when there is a bite.

POTATOES.

This is the common month for planting potatoes, but in our opinion the worst. The early crop should have been planted weeks ago, and the late or general crop not till after the middle of June.

BETTS, CARROTS, ETC.

Whatever root crops are to be planted for stock feeding should, with the exception of the turnip, be planted now. Abundant manuring and thorough working of the soil should precede the planting.

PEAS.

The field pea, for any purpose, may be planted after the middle of the month.

BROADCAST CORN.

Corn broadcast, for green feeding or fodder, may now be sown at intervals of ten days.

MILLET.

Millet of any kind for fodder may be prepared for and sown early in June. A peck of seed to the acre is sufficient, but heavier seedling gives finer hay. The soil must be highly manured, and the surface put in fine condition.

SORGHUM.

The ground will need very thorough preparation and abundant manuring. It is not advisable to plant till the ground is warm enough to make the seed germinate and grow quickly—say after the 15th of the month.

PUMPKINS AND CYMLINGS.

Plant them the latter part of the month.

SWEET POTATOES.

To have them in abundance, a lot should be grown outside of garden limits. Light rich soil, with little or no manure, is most suitable for them. If they are made to grow very large, it is at the expense of the quality.

WORKING STOCK.

Working stock of every kind should have special care during the spring months. Otherwise they are least able to work when there is most need of their labors. Horses should be well-groomed, and fed abundantly with chop made of any sound long food, and corn, or rye meal. If corn be used, it is well to mix one-fourth of wheat bran with it. Oxen, if not in best condition, are liable to get weak, and fail to do their work as the days get warm. They are generally considered unfit for labor in hot weather, only, we believe, because not treated as they should be. If given half a peck of corn meal, or its equivalent, daily, to each head, and kept on dry feed while working, they will continue to work as steadily through the season as horses.

COWS AND CALVES.

When there is grass affording a bite for the cows, they and their young are likely to do well. The best method of treating a valuable calf is to let it run in the pasture with the cow for three months and then wean it.—When milk is valuable this is costly keeping, and must be modified according to circumstances. Sometimes the young calf is taken at once from the cow and taught to feed on the new milk, which after two weeks is gradually changed into skim milk. This method may not be altogether successful without great care. A safer method is to keep the calf tied, which helps to gentle it, and let it take a portion of the milk directly from the cow at stated periods, diminishing the quantity as it learns to take other food.

SELECTING CALVES.

In the way of selection, we should accustom ourselves to noticing such points as may

direct us in choosing those which may best suit our purpose. In the first place, if we would have good milkers, take the calves whose mothers are good milkers, and whose sires are from a good milking strain. The calf itself should have such points as indicate an aptitude to develop good milking qualities; as small fine head, rather long in the muzzle, bright eyes, thin, tapering neck, small, well shaped legs, long body, large hind quarters, set wide behind, soft skin, fine hair, and above all, the milk mirror, or udder veins, should be large and well developed.

Male calves, to be reared for the team or the butcher, should have well shaped head, small ears, short, thick neck, deep brisket, broad chest and shoulders, fine bone, long body, well rounded behind the shoulders, straight back, wide loins, full quarters, tail thin and tapering, skin soft, and not too thin.

SHEEP SHEARING.

Sheep shearing should be accomplished soon after the middle of the month. A great deal of care is necessary to avoid bruising, or cutting with the shears, to both of which the animal is liable from careless hands.

The practice of washing the sheep before shearing, is being abandoned, we think, in great measure, as injurious to the animal, and incurring risk to those engaged in it. If a fair and certain rate of deduction from the price of washed wool could be had for that which is unwashed, there would be no doubt, we think, of the propriety of selling always in the dirt.

After shearing, the flock should be protected from bad weather, especially long, cold rains, by a shed which they may resort to.

•••
The Paris *Kentuckian* says; Mr. S. W. Tavebaugh, of this county, has shown us some singular grains of corn, in which the grains are doubled, each grain having a separate heart. He accidentally noticed a few grains as he was shelling his seed corn last year, which he planted, and they produced ears of corn with all the grains doubled.

•••
A correspondent of the *Ohio Farmer* thinks a sow should not be allowed to breed until at least a year old. He thinks that until the boar and sow reach the age of four or six years, their progeny is better than from young hogs.

The Vegetable Garden.

MAY.

Asparagus Beds.—Keep these clear, and stir with a fork.

Cabbage Plants.—Put these out from time to time as the weather is favorable. The beds should be thinned if they stand too close, that the plants may become stocky and well rooted. Hoe and earth up the early planted.

Make sure of an ample supply of plants for the main crop to be planted in July. There are frequent failures from the destruction done by the fly. Those who have the opportunity should experiment with a solution of the carbolic soap. The Flat Dutch, Stone Mason Drumhead, Drumhead Savoy, &c., are suitable sorts for late planting.

Cauliflower.—Keep these well hoed. Thin out where planted too close, by taking out each alternate plant, as soon as there is a small head formed. Sow now for the fall crop, and continue to plant out from time to time from the hot-beds.

Beets.—Keep these well worked—thinning where necessary and transplanting to fill vacancies.

Colery.—Plant out from time to time for early use. Sow seeds now, in rich, moist and well prepared beds, to plant the principal crop in July.

Peas.—Sow for succession, Champion of England, and dwarf Marrowfat, keeping growing crops worked, and, those which need it, properly supported.

Tomatoes, Egg Plants, Peppers, &c.—Should be planted out of the hot-beds as they get size enough, and the weather suits.

Pole Beans, and String Beans.—for successive crops should be planted; also, Turnips, Radish, Lettuce, Prickly Spinach, Parsley, &c.

Sweet Corn.—Plant every two weeks for summer use.

Melons.—Plant plenty of these, of several sorts. Be sure to get the best seeds, and plant on inverted sod ground if practicable.

Potatoes.—as soon as above ground, should be hoed and have a deep working.

Keep all sorts of growing crops duly thinned.

The scattered seed of last season, will germi-

nate with the growing warm weather, and should be destroyed by a thorough dressing of the whole surface of the garden.

The Fruit Garden.

Newly planted trees, when summer approaches, should be mulched with litter enough to keep down the growth of grass and weeds, and preserve a uniform moisture. Straw to the depth of four or five inches, and to the distance of four feet from the stem, answers the purpose best. The ground between newly planted trees, may be cultivated in growing vegetables, if well manured.

Where it is necessary to work among trees with a plough, use only one horse, with a shortened swingle-tree and lengthened traces.

Strauberrries need much moisture while setting and growing the fruit, which should be applied artificially, if practicable, and necessary. The best way to secure sufficient moisture however, is by mulching immediately after cleaning off the beds in spring. Pine shatters or straw are both very suitable for the purpose. A rich soil is very necessary to secure an abundant crop, and to make the fruit large, there must be room enough between the plants.

The Flower Garden.

Continue to sow annuals, and plant out such kinds as have made sufficient growth, any time in the month.

Plant out in the beds and borders, as the weather gets warm enough and settled, bedding plants of all kinds, as Scarlet flowering and other Geraniums, Verbenas, Salvias, Heliotropes, Petunias, &c. Keep plants enough in reserve to supply vacancies. Before planting, be sure to harden the plants by some days of full exposure to the air; otherwise they are liable to great loss.

Cuttings of Geraniums may be taken now, potted in small pots and placed under glass, for fall blooming.

The walks as well as borders should be kept clean, and should be rolled occasionally.

The lawn should be mowed frequently as the grass springs, and should now be kept in such condition as will make it accord with the opening beauties of the flower garden.

Cheese Making—its Flavor.

In our eastern exchanges we find the proceedings of the third annual meeting of the American Dairyman's Association, from which we extract the following:

The causes affecting the flavor of cheese were treated under the following heads: unclean milk; diseased milk; cows eating weeds and leaves of plants that impart their peculiar flavor; overheated milk, occasioned from chasing the cows with dogs when driving from the pasture; and the pounding and abuse of cows in the stable when milking; failure to remove natural heat from the milk before it reaches the factory; impure annato; bad rennet; curds insufficiently cooked; curds too lightly salted; salting curds too warm; putting curds into hoops and to press before they are properly cooled; exposure of cheese to a too high temperature while curing. Mr. Weeks elucidated the several heads above with extended remarks. Mr. Moon, of Herkimer, mentioned as a source of bad flavor in cheese, the pasturing of cows upon low, wet, clay lands. Milk, he said, was often rendered unclean from the dust filling the hair of the cows in certain seasons, and partly transferred to the pail while milking.

Prof. Brewer, of New Haven, thought impurity of flavor in cheese might be brought about by a fermentation or growth induced by decaying matter falling into the milk. This matter was of the same class of growth as yeast, the nature of which was elucidated. Scalding pans and utensils killed the germs which produced decay. He referred to cheese making in Switzerland, and the excellent pastures on the lower portions of the Alps.

The older the pastures become in a good dairy region, if kept free of weeds, the better it is for grazing and producing a good quality of milk.

Mr. Paxton, of Erie, thought the great trouble was that cheese makers were not careful enough, and need to learn and appreciate cleanliness, both as to person and apparatus. They must have a true sense of cleanliness if a radical improvement was sought.

☞ Cattle standing in cold, muddy yards, exposed to the weather, consume about twice as much as those in sheltered stables, kept clean and littered, and free from the accumulation of manure.

An Essay on Colic and Bots in Horses.

Written for the "American Farmer" by G. H. DADD,
V. S., Baltimore, Md.

*Entered according to Act of Congress, in the year 1868,
in the Clerk's Office of the District Court for
the District of Maryland.*

Continued from the April number.

A horse while journeying on the road or when performing on the race-course, should not be allowed to imbibe too freely of water, because hard work and active exercise, almost, for the time being, suspends the digestive function; the water then remains in the large intestines, occupies space therein, and being weighty, may in the rapid movements of the animal, operate unfavorably in various ways, more particularly by weight on the gut itself; it being pendulous from the spine.

A horse is often brought into the stable in a state of exhaustion and perspiration; under such circumstances it would be decidedly wrong, to either feed or offer him water, until he had been rubbed dry, and had time for a short rest; for then, food is just as likely (and I think more so) to operate unfavorably as water, on such an animal.

Many horses, however, even when in an exhausted state, will fill their stomachs with food and water, and yet enjoy immunity from colic. Therefore, should colic occur in a horse after a hard drive, and he having partaken of both food and water, it is then very difficult to decide whether the drive, food, or water operated as the exciting cause of the malady; should, however, flatulent colic occur, we know that from some cause or other the digestive organs are deranged, and the food instead of being properly digested, runs into fermentation, thus generating carburetted hydrogen within the stomach and intestines. On the other hand, should the case be one of a spasmodic character—spasmodic colic—we may infer that it is owing to some derangement of the nervous system, first aroused by a morbid action of the stomach, which is the centre of sympathy, for it is well known that the brain has intimate sympathetic relation with the stomach; hence stomach staggers, &c. So, it appears, that the same causes operating on two animals of diverse temperament, and predispositions, may excite spasm in one, and flatulency in the other; and notwithstanding our best efforts to prevent it, colic will occasionally occur among horses that are predisposed to it.

At the season of the year when dried corn

is first fed to horses, colic is quite prevalent, in one or the other of its forms; but on examination it will be observed that in so far as their conformation is concerned, the animal attacked is predisposed to the affection. A horse subject to flatulent colic, is known to have a capacious belly, voracious appetite; does not properly masticate his food; and he is not over particular as to the kind of diet, for we often find him devouring, with apparent relish, the filthy material that has served as bedding. The tongue of such animal is usually foul; the breath is fetid; the teeth are incrustated, and the salivary fluid resembles soapsuds, and often runs spontaneously from the mouth. Horses subject to flatulent colic are very apt to become crib-biters, and a crib-biter is noted for having a large belly; which appears out of proportion, when compared with other parts of his body.

In regard to *corn* I find that some of the stable keepers have it steeped in salt and water for several hours before it is fed to the horses, and I think the plan is a good one, in so far as the colicky horse is concerned, for salt is a powerful antiseptic, and by its presence, when thus introduced into the stomach, prevents fermentation, and the corn being somewhat softened by the salt solution, may undergo a more rapid digestion, and thus prevent an attack of colic; yet notwithstanding this precaution I am frequently called upon to treat horses thus fed; and the same remark applies to some horses that have been fed on grass, clover, green corn, and even on good oats and hay. Finally, therefore, we are led to infer, that the chief cause of colic exists within the horse, and not outside or around him; errors in diet and management, are only the indirect or exciting causes, the principal one being of a predisposing character.

TREATMENT OF SPASMODIC COLIC.

The medicines used for the treatment of spasmodic colic, must be of an antispasmodic character; such as assafoetida, lobelia, sulphuric æther, warm water applied to the belly and loins, and enemas of an infusion of lobelia. Sometimes the attack is so violent, and the patient so unmanageable, that it becomes absolutely necessary to chloroform him, using for this purpose, equal parts of chloroform and sulphuric æther, mixed. When the animal gets on the floor, he must there be held by the neck, while the chloroform, by means of a sponge to the nostrils, is administered.

When the animal is fully under the influence of the anæsthetic, he will lay perfectly quiet, then remove the sponge for a time, and as soon as he shows signs of returning sensibility, reapply the saturated sponge; in short, keep him under perfect control. In the mean time, throw into the rectum enemas of warm water, to which add fluid extract of lobelia, in the proportion of one ounce of the latter, to two quarts of the former, and let the belly and loins be covered with a blanket saturated with water as hot as skin will bear without scalding.

The animal must also be drenched with one ounce of fluid extract of lobelia, but this must be given at a moment when the animal is not fully under the influence of æther, otherwise he might be unable to swallow, and it would then pass into the wind pipe and choke him.

This plan of treatment is usually successful, but it must be continued during a period of half an hour or more according to the urgency of the case. The dose of lobelia may be repeated, but the quantity should be decreased each time, and the enemas may be administered often, or until the rectum is completely emptied of feces, and the blanket must be constantly kept wet with hot water. Should the animal; on being permitted to recover from the effects of ætherezation; appears to be free from spasms and pain, he must then be rubbed dry and led to a stall. He will not require anything more of a medicinal character, but should be fed on thin gruel for, at least twenty-four hours.

We sometimes, however, succeed in relieving cases of pure spasmodic colic, by a copious abstraction of blood from the jugular vein, and by the use of tincture of assafetida (dose two ounces,) aided by enemas of warm water, and the warm bath.

The following case, from my late work on the Horse; may possibly prove interesting to the reader, and will go to shew some of the difficulties under which we labor in treating this formidable malady.

On making an examination of the animal, the following symptoms were observed: Pulse, very strong and wirey, averaging twenty beats above the natural standard; membranes of the mouth, nose and eyes very vascular, or in other language, highly reddened; the surface of the body was bedewed in patches, with perspiration; there appeared to be much

rigidity of some of the muscles, more especially in the abdominal region. All at once the animal would throw himself violently on the floor, and move his limbs about in the most wild and reckless manner. He would assume all sorts of positions, yet seemed to obtain most ease when flat on his back; still, if closely approached or touched, he would kick and strike furiously as if intent on mischief. In short, he cut up such antics that it was dangerous to approach him, yet we finally succeeded in giving him two-ounces of tincture of assafetida, and an enema of lobelia infusion.

The animal kept growing more restive and uncontrollable, until at last it became very evident that convulsions had set in. The breathing had become fearfully laborious and rapid; his nostrils were dilated to their utmost capacity; the sight had become so affected through temporary paralysis of the optic nerve, that total blindness set in.

There seemed to be but little chance for the horse's life, and fearing that he might, through violence, kill himself, or injure some person in attendance, it was thought best to chloroform him, and thus put a stop to his dangerous performances, hence a mixture of chloroform and sulphuric æther was procured and by means of a sponge attached to the handle of a hay-fork, we were enabled to chloroform him at a safe distance from his feet.

The patient did not seem to like this novel practice, for he tried hard to strike those near him, but being temporarily blind we had the advantage of him. It soon became evident, that the chloroform was taking effect; the patient gradually became quiet, and thus we obtained the mastery. As it is dangerous to keep a horse under the full effects of chloroform for any great length of time, the sponge was removed, and only applied occasionally, slightly saturated, so as to insure a state of incomplete insensibility. It was an encouraging sight to behold the once powerful and furious animal now lying free from pain, deprived of the power to injure himself or those in attendance on him; and it is gratifying to know that science ministers to the wants and necessities of the inferior, as well as the superior orders of creation.

TREATMENT OF FLATULENT COLIC.

Various remedies are recommended for the treatment of flatulent colic, some of them

inert or harmless, others more or less dangerous, and thus many valuable animals are lost. Our chief object in the treatment, is to restore the tone of the stomach, and arrest fermentation, and this is accomplished readily by administering one of the following drenches:

Drench for Flatulent Colic.

Fluid extract of ginger.....one ounce.
 " " of goldenseal.....half an ounce.
 Water.....two ounces.
 Crystals of carbolic acid.....fifteen grains.
 Mix.

Another.

Tincture of Jamaica ginger..... { of each, two
 " of Gentian..... } ounces.
 Powdered Hyposulphite of Soda.....six drachms.
 Water.....four ounces.
 Mix.

Drench the animal with either of the above prescriptions, then administer copious enemas of warm soapsuds; wait patiently until an expiration of two hours, then if the animal is not relieved repeat the dose, but do not mix it with any other kind of medicine. Locate the patient in a wide stall, or on soft grass land, where he can roll and tumble about without danger to himself.

The patient should not be urged to exercise, as is often the case, for he is the subject of excruciating torment, and active exercise only makes matters worse; should, however, the attack be slight, a little walking exercise may prove beneficial. A good wisp of straw vigorously applied to the belly and flanks, sometimes does good, occasionally, however, I apply a mustard embrocation to the belly, often, with marked benefit.

Sometimes the gas accumulates so rapidly in the intestinal canal, and the abdomen becomes enormously distended, that rupture or suffocation must ensue, unless something be at once done to liberate the gas; at such a stage of the malady, it is only a waste of time to force drugs into the stomach, resort must be had to an operation by means of the trocar and canula. This instrument should be inserted through the walls of the abdomen, on the left side, into the large intestine; on withdrawing the trocar (cutting instrument,) a stream of gas will issue through the canula, and the latter instrument should be kept in the intestine until all the gas is evacuated; we then administer one of the above named drenches.

[To be continued.]

Contrary blasts of doctrine do sift and winnow men's faith.

Horse Breaking and Horse Sense.

A horse's sense is good common sense. Many a man does not know half so much about some things as a horse, and there is a great difference in horses. The horse is not naturally suspicious, but he is timid when young. He learns very soon what his weapons are—teeth and heels—and in what his security lies—flight. His boldness and the "glory of his nostrils" come when "he rejoiceth in his strength." With his age comes the knowledge of his powers, and if he has never been mastered—never made to yield to any will but his own—if he is to be made useful, the struggle must come sooner or later, and man's will or horse will must triumph. We think it best to begin quite young with colts to control them; so advise to halter a colt while it runs with the mare, and to do it after feeding it with carrots and sugar, until it thinks it will only get caressing from mankind, and has no fear of any man. The colt submits easily, because it is the easiest and pleasantest thing it can do, provided it is not frightened, and would as lief be led as loose, since the curtailment of his freedom is made up by sweets or carrots. The sense of smell in horses is very acute, and if they are suspicious of anything they always approach it cautiously and smell it. They should be indulged in this; and harness, saddle, &c, should all be investigated by the nose as well as by the eye before a more intimate acquaintance is forced upon the horse. A horse-ring of from forty to fifty feet in diameter is one of the greatest aids a horse trainer can have. In this a horse too restive and spirited to take a lesson may be tired out so as to be very docile, and a tired horse is much more susceptible to both favors and instruction than one full of vim and fire and play. There are a very few common-sense rules, which, if followed, will commend themselves to the horse as well as to the trainer, viz:

1st. Always feel kindly towards a horse, no matter what he does to you, and consequently never show "temper." Remember the horse knows instinctively how you feel.

2d. Never go near a horse if you are afraid of him; the horse will know it and take advantage of it before you acknowledge it yourself.—*Turf, Field and Farm.*

The first work of grace is the desire of grace.

For the "American Farmer."

"Restitution."

"*Restitution*, in some form, is indispensable to the best system of agriculture." This has been well put, by your correspondent, Mr. D. Lee, in this month's number of the "*American Farmer*," and may safely be received as an agricultural maxim. But the question arises, how is "restitution" to be best made?

Large amounts of mineral matters are annually carried off from soils, and it is clear, that unless the soil receives from some source, supplies of these matters, so taken off, matters which are essential to the perfection of the crop, it must become impoverished and eventually barren. Irrigation, when practicable, and when the irrigating water contains elements of fertility, is doubtless, the cheapest means of making "restitution." This is, however, but seldom practicable, and the great majority of agriculturists must seek elsewhere for some other means of making "restitution." I have been led to reflect on this matter, seeking some more profitable system of fertilizing soils, than the use of commercial and manufactured manures, which are too costly for profitable application. In agriculture, as in every other pursuit, that system is the best, which is productive of the largest profit.

The animal and vegetable world, with their remains, contain mineral materials, which have originated in the earth. The vegetable world has eliminated these mineral constituents from the soil, and the animal world has eliminated them from the plants which supply it with aliment. The dead organized matter, in part, is returned to the soil; but, for thousands of years, enormous quantities of these mineral constituents have, year after year, been swept into the ocean by floods in the rivers and in the sewage of towns and cities; and yet, trees and crops of grain and grass, continue to grow with luxuriance, and to supply the animal world, generation after generation, with those mineral elements which are essential to their being. Whence the source of this supply? The answer is plain, viz: that the source of supply is the same that it was thousands of years ago. That source is, the debris of rocks, from which the soil itself originated. We derive great advantage from irrigation: but whence come the fertilizing matters which the irrigating waters deposit in the soil? They can only come from the rocks on the surface of the earth, or perhaps,

from its bowels, collected or dissolved, in the course of the stream from its source. Can we not learn a lesson here from nature herself? Can we not by some system or process of agricultural manipulation, eliminate these essential mineral constituents from the soil on the spot where the plant grows? or perhaps it would be more correct to say, from the small disintegrated undissolved stones, or debris of rocks, found mixed in all soils, excepting perhaps the pure vegetable alluvials.

In my article (written for your February number) I illustrated my theory by describing the system pursued in Chester county, where, as your correspondent correctly infers, "the thrifty farmers get more fatness from spring, brook and creek water, than is generally believed," but in that Brandywine district, which undulates in successive large knolls and elevated table lands, the largest and best crops of corn are grown on these high lands and knolls, and indeed the best and oldest green grass. My comparison now is with the lower fields, but not with the Brandywine meadows, which are annually flooded, and manured with rich deposits brought down by the creek through thirty miles of country, of the most diversified geological formations, which are extremely fertilizing. I drew attention to the fact that year after year, for ten, twenty, or even thirty years, immense crops of grass, pasturage, or hay, have been removed from these upland fields, without the addition of any phosphate or animal manure, and yet from such fields, so cropped, the best and largest crops of Indian corn are produced; and that the system I there described is the one generally practised in that and the neighboring counties.

The chemists and geologists have told us, that *primitive* soils contain phosphorus, and indeed it exists in traces, in nearly every soil, and that must be true, for the chemists likewise tell us, that nearly all our crops, as well grain, as grass, and forage crops, contain phosphorus. In looking over the reports of the chemists of the "Royal Agricultural Society" I find some facts and figures, which I here give you.

It is stated, that an acre of soil one inch deep, weighs one hundred tons. Allowing the produce of hay from an acre of unmanured ground to weigh, when dried, one ton, the average yield of mineral matter from this ton of hay is about one hundred and fifty-

eight pounds, which is about one and a half times as much as from wheat or barley (unmanured.) Of this mineral matter, besides other constituents,

About 23 lbs. was lime.

32	"	"	potash.
7.7	"	"	phosphoric acid.
13	"	"	soda.
41	"	"	silica.
9	"	"	carbonic acid.

The quantity of *potash* from the hay is stated to be about twice that from the gross produce per acre of the grain and straw of wheat or barley. The roots of the grasses extend much deeper down than one inch, or than six inches; indeed the grass from which this ton of hay was derived, perhaps received its nourishment from eight or ten tons of soil, from which it abstracted only 7.7 lbs. of phosphoric acid. The phosphoric acid is believed to be combined with lime or potash, and is doubtless dissolved from its combinations in the debris of rocks, which exist in the soil, by the carbonic acid, supplied from the vegetable deposits, made by the roots of the grass, held by the rain water. These phosphates and other mineral matters accumulate in the soil, to a greater amount than the grass crop requires, and hence the fertility and adaptation of an old sod field to corn. Experiments have proved the power possessed by soils to separate and retain such mineral constituents as may be required by plants, especially, should lime be present.

I do not by any means neglect the use of stable and barn-yard manure, and the collection of offal from the house, but suggest, that "good farming" is self-sustaining, and that "restitution" may be made without going off the farm; nor would I discard commercial or manufactured manures. In localities where hay and straw command a high price, I would sell both to a large extent, and buy manufactured manures. Taking expense compared with result into consideration, in these days of high prices, it will cost nearly as much to cart out, from the stables and barn-yard and to spread on the field, this bulky manure, as to buy commercial manures. Some people keep stock in order to *make manure*, but this may be a very costly manure. My advice to *gentlemen city farmers* would be, to have as little to do with live stock as is compatible with necessity, that is, if *profit* is to be considered.

According to Boussingault's analysis, the *ash* of barn-yard manure contains but 3 per cent. of phosphoric acid; of lime 8.6 per ct.; of potash and soda together 8 per ct.; and of silica and sand 66.4 per ct. With the hope that my long communication will not prove tiresome, I will close. E. C. EVANS.

Lower Merion, Montgomery Co., Pa. April 3, 1868.

Raising Turkeys.

Turkeys are but little more difficult to raise than any other kind of poultry. The most simple methods are always the best.

While the eggs are being incubated they should not be permitted to get too dry. It is a good plan to moisten each egg every day for four days before they are hatched, with a cloth dipped in lukewarm water. When the chicks are hatched, care should be taken that they are kept in nests free from lice; hardly any chicks suffer from the attacks of these vermin so much as these. Have the nests sprinkled every few days with powdered sulphur, and have some of this in the dusting place of the mother. Young turkeys thrive best with mothers of common fowls. Have each brood by itself in a ploughed patch where the young birds can obtain insects, etc., without running into long wet grass, which is, notwithstanding our correspondent's observation, hurtful—that is, if the chickens get wet, and they will, even if there is but little dew.

For food, the best is undoubtedly coarse Indian meal, moistened into dough, with, in cold weather, a little powdered black pepper scattered in it. The practice of stuffing a pepper corn down the throat of a chick, which many men still practice is barbarous and unnecessary, to say the least. Have plenty of pure clean water always accessible. Have the coop in which the mother is confined large enough for her to move around in, without being obliged to walk over her young, and our word for it, if the above directions are followed, you can raise turkeys.

Of course, if you keep your different broods near enough together to permit the quarrelsome hens to peck each other's chicks, there is no help for it.

For size and delicacy of flesh the best variety is the Bronze turkey undoubtedly, but eggs from any well taken-care-of breed, in which parents are good sized, but not too old birds, will bring out good chickens.—*Mass. Ploughman.*

For the "American Farmer."

Drainage—Practically, understood by few;
Theoretically, by all.

BY A NORTH CAROLINIAN.

Drainage does not imply a superficial excavating of the surface, however dense or frequent, but *deep and dense*, and the *deeper the better*.

It is a practice among farmers to cut drains "*few and far between*," and worse than all, *too shallow* to drain the water, except in the immediate neighborhood, and even then, if the soil is a tenacious clay, effecting no good at all.

I have seen water standing within three feet of a ditch, (not drain) and there remain until it disappeared by evaporation. What good can possibly result from such ditches? None whatever; and it would answer almost, if not quite as well, to dispense with such entirely.

Now if the doctrine of capillary attraction is true, (and no one will deny it,) it follows that the *deeper and denser* the drains, the sooner and more effectually the water is absorbed by the substratum, and thence conveyed to said drains, whence it passes off readily, and hence dries the earth in the vicinity, and *this in its turn*, absorbing the water adjacent, by a gradual geometrical progression, in a descending series, however, drains off the water, till losing its absorbing influence, on account of the distance from the drain, it avails nothing.

I just now said that a *drain* dried the earth geometrically in a descending series, and this is because the earth or *belt* near the ditch, which *was drained* by the ditch, is being constantly replenished with water adjoining, and so on, indefinitely, *that portion* first drained, being kept wet by water passing to the *neighboring drained* land, and the next belt, and the next, acting in the same manner, slower and slower.

And this brings me to that part of my subject which is most necessary, (as I will prove presently) and at the same time most *dreaded* as well as *neglected* by the farmer, because it involves a heavy expense, without a compensating reward, as he *fears and believes*, who has never *experienced* the result, or *seen* the good effects; and this is, dense as well as deep drainage.

I have already shown in what ratio a *drain* dries the land, and will now prove the necessity of frequent drains. It follows, then, of course, that the more drains, the sooner the

land is dried in a geometrical proportion ascending; and all know the necessity of drying land, for the sooner dried the sooner it may be ploughed, and hence, the time which might be lost in delay from a superabundance of water, if *gained* would more than compensate, *perhaps in one year's cultivation*, for all expenses, to say nothing of the *increase* in yield, and the improving of the soil afterwards, and in the improving or advancing of the temperature or climate of the land from eight to ten days; the latter of which is not only necessary, but very advantageous in the cultivation of cotton, in particular, by which the cotton is advanced, both in growth and maturity, *proportionally*. Now presuming some farmers may not comprehend what is meant by capillary attraction, I will try to illustrate it, and make them sensible of the meaning in a farmer's way. For instance, suppose you had a piece of meadow land, and about in spots in this meadow, are springy places, which apparently *defied* all drainage, the water standing on, or near the surface.

Now what is the cause of this water standing so near the surface? This is caused by capillary attraction, the surface attracting the water, as a piece of sponge would water, because it cannot escape through any other channel; and hence it rises to the surface and there stagnates and evaporates by a slow process, rendering the land barren and unproductive. Another cause, and the chief one of these springy places, is, because they originate from springs whose source is considerably *above the level* of these wet spots, and *frequently an ordinary ditch of two or three feet depth*, will not reach them, and therefore they continue wet and unsightly. The conclusion, then, might seem to be that, if an ordinary ditch will not *tap* them, then these wet spots must forever remain undrained and worthless. *No, not by any means, but the reverse.* And this is a case in point to prove that deep drainage is sometimes necessary and *must* be effected, in some shape or other, if to the depth of *five, ten, or fifteen feet*, to drain such places. Now for the edification of those desirous of learning the mode, and who will *believe*, I will give my plan, although there are many, who, not understanding the laws by which water is governed, will ridicule the idea as absurd and foolish in the extreme.

In the first place, then, cut an' ordinary ditch (as deep as possible if you choose) to

draw off the water, and if this does not answer the purpose, then get you a large auger—two inch—and have it securely fastened in a staff, say eight or ten feet long, (Jupiter Olympus!) and bore holes at convenient distances in said staff, through which insert a stick as a handle. Being thus equipped, examine your ditch, and wherever you see any sign of water oozing up, there bore in the bottom of the ditch, from 3 to 5, 6 or 7 feet deep, (mercy upon us!) as the case may be, drawing out and cleaning the augur at intervals, and when you have gone the required depth, which will be indicated by a clear *white* or *yellow* sand, you may discontinue boring, and after a little the sand will begin to spew up, and soon the water will follow boiling and throwing up sand; sometimes to the amount of a peck or more, according to the force of the water. Continue at intervals of 30 or 40 feet to bore in the same way, and I will guarantee, that in a few days you will see a great change, and after a little your wet, unsightly spots will become *dry*, *arable* and *productive*. I have practiced this mode of draining such spots for ten years, and I have frequently caused springs to gush up, discharging from 30 to 40 gallons of water, *by measurement, per hour*, where there was no sign of a spring before, (and in such places you may have any quantity of springs, but after a while, the stronger will absorb the weaker.) It does not follow that *white* sand, because this is a good sign of springs, always turns out to be the best, but, on the contrary, *if by boring a foot or two deeper you reach yellow sand, nine times in ten you will tap a spring from 100 to 500 per cent. stronger*. There are exceptions, however, to all rules. Now does it not follow, that if capillary attraction causes this *pent up* water to *rise*, for the want of a *passage*, to the surface in low ground, that, more or less, the same laws *may* and *do* act on uplands, (particularly of a wet time,) even where there are no springs; undoubtedly, for from experience, last year, (1867,) I knew it to be the case. Then, as a matter of course, it follows, that uplands require drains as well as low lands; if not as numerous, at least as *deep*.

Now, my brother farmers, if there is philosophy in stones, why should there not be in the sub-drainage system. If water is attracted to the surface for this want of an *outlet*, it seems very philosophical to suppose, that if

you make an outlet, although it were 40 feet deep, that as water naturally unimpeded has a downward tendency, it would seek that passage; but if you *check* it, or *hem* it *in*, despite all your ingenuity to *force* it back, it will *out* somewhere; and unless you make it a passage, it will *find* one, if it be on the top of a hill. To prove this fact, (I write this for the uneducated farmer, not for the learned,) on one occasion, after I had tapped a spring as above described, I had the curiosity to know how high the fountain *head* of that spring was. I procured some old cast pipes, and inserted one in the hole I had bored, very tight, so no water could escape, and the water rose 2 feet 8 inches high, just on a level with the ground, and there it stopped.

Do you not see that for the want of a *passage* it sought the surface, and hence kept the surrounding land always wet. Then learn, and practice what you learn. But, says one, how do *you* know that this is the cause of these wet spots? Because, as I said, as is sometimes the case, an ordinary ditch *did* not *dry* my land, but after I had caused springs to *gush up* where there were *none* before, and upon inserting the pipe in one of these springs, I found the water *rise* about on a level with the land, and *this land* became, as soon as the nature of the case would admit, *dry*; then there was proof positive, that this water *ascended* from *below* at the depth of 6 or 7 feet from the surface, for it is one of the laws of water, as true as heaven, that it (water) *seeks* its level, and will cease to rise when it has reached that point.

Apropos of tapping springs by boring.—Ten years ago, the thought, (seeing that ditching did not drain a certain piece of land,) suggested itself to me that this plan might succeed. Accordingly I did as I have directed above, and the very *first trial* I made (and it was lucky I did) I succeeded in *tapping* a spring, about *four* (4) feet deep from the bottom of the ditch, 2½ feet deep. I first struck a belt of white sand, from which there came a pretty free stream, but being curious to know the result, I continued boring till I reached *yellow* sand, when, to my utter astonishment, the sand gushed up in wreathes, and in a few minutes the water flowed *three* or *four* times as copiously as it did before.

Result, The land dried, and I have cultivated it ever since; first, in corn; then, in

clover, which was good, and since, in corn again.

Now, Mr. Infidel, if you disbelieve, come and see.

A DITCHER.

April 3, 1868.

Hop Growing Second Season.

We gave in our April No., so much of an article, for which we are indebted to the Chicago Times, as relates to the cultivation of the Hop during the first season. In continuation we give what is essential to the second seasons, operation as follows:

The second season after planting, the vines yield their first full crop; and, as they are vigorous climbers, a sufficient number of poles should be secured during the previous winter, drawn to one side of the yard, and well sharpened, ready for use when required. These poles should be from 14 to 18 feet in length, and from 2½ to 4 inches in diameter at the butt. In trimming them, the knots should not be shaved off too closely, or the vines, when they become heavy, will slip down. In some localities, where young timber suitable for poles cannot be obtained, sawed poles are used, sawed to a taper, and nails driven in a few feet apart, to support the vines when they become heavy.

In the spring, when the vines have grown three or four inches high, and before anything has been done in the way of cultivation, the work of setting the poles commences. For this purpose, a crowbar, with the lower end made large, and of about the same size and shape as the sharpened end of the poles, is prepared. It is plunged into the ground to the required depth, and worked backward and forward until a hole is made sufficiently large to receive the pole. Two poles are set to each hill; some use three, but two appear to be preferable, as three render the yard too thick for a free circulation of air, and also require more vines than the ground can profitably support. They are set one foot away from the centre of the hill so as not to interfere with the bed-roots; placed from twelve to fourteen inches in the ground, and their tops inclined away from each other, so that the points of the two poles will be about equidistant from each other and from the tops of the poles set in the adjoining hills. In a short time, the vines will have grown to be eight or ten inches high; and then commences the

work of tying up the vines. A large number of vines will be found in each hill, and, selecting the hardiest and strongest, two will be started up each pole. For this purpose they are loosely wound once or twice around the pole, care being taken to wind them in the direction of the course of the sun, or from left to right. They are then loosely tied in their position. For this purpose pieces of woolen yarn, raveled from an old stocking, are preferred to anything else. The kinks and quirks in it give it sufficient elasticity to keep the vine in its required position without confining it so arbitrarily to one place that it is liable to be broken or injured from its inability to yield to any sudden pressure. The yarn is so weak, also, that it does not bind the vine as it grows older and increases in size. On tying up the vines the first time, all the remaining vines in the hill (save one or two, which are reserved to supply the places of those which may become broken by accident) are gathered together, and, after receiving a good, sharp twist, are bent down and covered up with dirt, when they soon die. These surplus vines should never be cut off, as they bleed profusely, and, springing from a common root, weaken the whole hill. The whole yard is gone over occasionally, to see that the tops of none of the vines become thrown down or lose the pole; and, when one is found out of position, it is tied in its proper place in the same manner. When the vines are well up the poles, the remaining surplus vines in each hill, which had been reserved for use in case of accident, are bent down and covered up with dirt. When once fairly started up the pole, the vine cannot be easily thrown down; but the wind frequently bends the tops over away from the pole, and thus checks the upward flow of the sap, and places a limit to the growth of the vine. It is a good plan to go over the yard as often as once a week, to restore all such to their position.

The poles once set, the yard is ploughed once, and at intervals gone over with the cultivator, two or three times in about the same manner as corn—care being taken not to “hill up” the plants too much. The hoe should also be used to work close around the vines. They should be kept clean and free from weeds, as they draw strongly on the soil, requiring for their own proper development all the virtue there is in it; but all cultivation should cease as soon as the vines commence

to bloom, which, in this section, occurs about the last of July. If weedy, they can be gone over again after the hop is thoroughly set.

It would not be proper to leave this branch of the subject without stating that some farmers, instead of using long poles to which I have alluded, use stakes eight or ten feet long; connected at the top with strings running over the entire yard. This is a patented system, belonging to Mr. H. C. Collins, of Morris, Otsego county, N. York. As Mr. Collins furnishes full directions to those using his system, when they purchase the right to do so, it is unnecessary to describe it here. It has been used to a great extent in all the hop districts, and, although some profess to prefer it, the great majority of hop-growers unite in declaring that the vines will not produce so heavily when trained in this manner, as when trained upon long poles. It may be a good thing, however, in localities where suitable poles are not procurable.

PREPARATIONS FOR THE HARVEST.

During the spring and summer, the hop grower, if just commencing the business, must make ample preparations for the harvest, as the crop must be secured in a very short time, and requires more than usual energy and care in the gathering and curing, or it will become wholly or partially worthless. The first thing he will require will be

A DRYING AND STORE HOUSE,

of which several different plans have been made. Mr. Potter's, which, for a small one, I consider a model of convenience, is 20x40, with 16 feet studding, and cost \$400. It is divided into four rooms—two down and two up stairs—by a partition running from top to bottom, across the building in the centre. One room on the ground floor is the stove room. It has no floor, other than the natural ground. It is plastered on the ends and sides, in order to prevent the escape of heat, but has no ceiling. Two large openings are made close down to the ground, one on each side, to allow of the entrance of cold air to supply the stove and keep up a draft through the hops above. These openings are supplied with sliding doors, by which the amount of air entering the stove room can be regulated. The hop stove stands in the middle of this room. It is a large affair, capable of receiving ordinary cord-wood. The pipe is twelve inches in diameter, passing around the entire room

(acting as a sort of drum to throw off and distribute the heat to all parts of the kiln), four feet from the ceiling joists and sides, before entering the chimney which is in the partition I have already alluded to. Above the stove room is the kiln, or drying room, separated from the stove-room simply by an open floor. This floor is made of 1½ inch strips, placed 1½ inches apart, and covered with coarse (11-ounce) burlaps, having a very open mesh. Upon this floor the green hops are spread to dry, and the stove room having no ceiling, the warm air rises up through the open floor and circulates through the bed of hops. The sides and ends are plastered or ceiled to the roof, but here the bare shingles are left exposed. The kiln is provided with a large opening in the top of the roof, to create a draft and allow the escape of the clouds of vapor, which rises from the green hops when drying. This opening is surmounted in many houses by a square cupola, the sides of which are made of thin strips of wood, so arranged as to keep out the rain. Mr. Potter's, however, as most others, is provided with a large funnel instead, which is open upon one side to allow of the escape of the vapor, and so constructed that it will revolve with the wind, and provided with a vane, which whirls it around as the wind changes, always keeping the escape upon the opposite side from the quarter from which the wind is coming. This form of protection for the escape is said to be far preferable to any other, as the way for escape of vapors is always free.

Back of the drying room is the store room, with a door communicating between the two. The strips of which the floor of the drying room is composed should be so arranged that, in shoving the hops from the kiln to the store room, they can be pushed lengthwise of these strips, as the shovel cannot be conveniently pushed crosswise of them. The floor of the store-room should also be made some two feet lower than the floor of the kiln, as it facilitates matters greatly when it comes to shoving off the hops.

Beneath the store-room is the press-room, into which the hops are thrown through an aperture in the floor. A small stairway leads from the press-room to the store-room. A portion of the press room can be used as a store-room when necessary.

In front of the hop house is a raised platform, on a level with the floor of the drying-

kiln, which it communicates with by a door. This platform is provided with a swinging crane, to which a block and tackle can be attached for raising the heavy sacks of green hops, preparatory to spreading them upon the kiln.

In large yards, it is desirable to have two kilns in order to facilitate picking, for hops must be picked as rapidly as possible when once ready for it, and, when once picked, must be dried at once, (for, if allowed to stand a few hours, will commence sweating, and then soon become worthless), and consequently limited drying facilities keep every thing else back. In such case the, same general plan of drying house can be followed by having the two kilns end to end, and the store and press rooms at their sides. The kilns, however, should, in all cases, be perfectly independent, heated by separate stoves, so that one or both can be used at pleasure at any time.

NEW MATERIAL FOR PAPER.—The New York Times says:—The high cost of rags for the manufacture of paper has led to long continued and costly attempts to substitute other articles, such as wood, straw, bamboo, cornstalk, husks, etc., but owing to the great expense for chemicals and the machinery necessary for converting the materials into pulp, the cost of paper has not, to any considerable extent, been reduced.

It is now alleged that the okra plant, which grows luxuriantly in all parts of the United States, possesses all the requisites for making every description of paper, from the common wrapping to the finest book or bank note paper, either sized or non-sized, without the addition of any other material whatever. It is claimed that this has been practically demonstrated, and the discoverer has, within the past few months, manufactured by the most simple and economical process, in different mills, a variety of samples of papers which, although made under very unfavorable circumstances, possesses all the characteristics of paper made from linen rags and manilla rope. If this should turn out to be true, it cannot fail to very greatly affect the price of paper, as the okra can be raised cheaply and abundantly. We understand that arrangements have been made for commencing the manufacture of okra paper this season.

The Profitableness of Small Fruit-Culture.

Formerly the facilities for transporting fruit to a distance were very poor, and few would have dreamed of sending the most perishable of the summer fruits hundreds of miles to market; yet now, under the new regime, strawberries are picked in New Jersey in the afternoon, and the next day they are on the tea-table of the Boston merchant. The same is true of blackberries, raspberries, peaches, and other fruits, that are shipped daily, in their season, in immense quantities, from the place of their growth to the best market.—Were it impossible to do this, we could not, with so great confidence, declare the profitableness of fruit-culture. What would it avail the Jersey farmer, if his vines were loaded with the finest and largest strawberries, if his only market were the villages of his own neighborhood? It may be said that he would not enter upon its culture, or at any rate, not so far from a large city, were it not for the conveniences of getting his crop early and quickly to the consumer. What is true of the East is more true of the West, which yearly sends her grapes, apples, and other fruits, to even the extreme Eastern markets. Granting, then, there are immense portions of country so situated, that the products may easily be forwarded to the consumer, the question will be asked by every person about to enter upon the work of fruit raising, what can be grown most profitably? The first fruit of the summer is a favorite one with all classes who can afford to use it: and strawberries, taken the years together, are a profitable crop; none more so, perhaps. The Eastern markets have never been so fully supplied that the laboring-man could afford to buy for his family; and, latterly, the price has ruled so high, averaging twenty-five cents per box of a quart each. At these prices, it is not an uncommon thing to realize ten to twelve hundred dollars from an acre of strawberries, and that, too, of the Hovey's Seedling. If the average product should command two-thirds that sum, it would still be a profitable one; for we take it that there are not many acres situated at a distance from a market that will yield such an amount of money when planted in vegetables or field-crops. The work of cultivating this crop is not the most laborious for the owner, while a large part of the work can be done by the women and children. The demand is unlimited, and has never yet been fully met, so that

if the business be one giving a large profit, as we have briefly attempted to show, then it is quite safe to extend it. After strawberries come the raspberries—an excellent fruit that has, of late years, been somewhat neglected. Its season, coming, as it does, just as the strawberries are finished, renders it valuable in making up a succession of fruits.

They are more easily grown than the strawberry, and will produce good crops even under the shade of trees. One reason why this berry has not been produced in considerable quantities is the fact, that, at the North at least, the canes need to be covered in winter to give the best results. This is not a great job, however; and should not deter a single person from entering upon the cultivation of this fruit. They can be sent to market in the same way as the strawberry, there being no extra expense for boxes or baskets. The yield is often large, and the fruit sells for nearly as much as the strawberry. The best information we are able to get, added to our own experience, all goes to prove that it is a profitable fruit to raise. The blackberry follows the raspberry, and is a very fine, healthful fruit; and can be grown with great profit, as has been fully demonstrated, where the soil is well adapted to its cultivation. Some astonishing statements have been made from time to time concerning the yield of this most excellent fruit. The demand for it has never yet been met, and there need be no fear of glutting the market for years to come. The currant is one of the most profitable of the small fruits, though there have been times when it did not pay a large profit. The introduction of large varieties has given an impetus to the culture of this fruit; and the demand from the market-gardeners for the plants only confirms us in the belief that its cultivation is remunerative.

The grape-crop next claims our attention; and for this we must speak a good word on the score of profit, whether considered for wine-purposes or the market. Much will depend on the location and section of country; for the effect on the grape of difference of soils and location is more apparent than on any other fruit. Presuming that the vintist has made a wise selection as to soil, location, and nearness to market, he may plant grape-vines of the best varieties for market purposes with the fullest confidence that his returns will be satisfactory, and probably greater than he

could realize from any other crop. An intelligent grower told us a few days since that he could raise Isabella grapes in New York, and deliver them in Boston, for three cents a pound, and make money at the business; and at six cents he could make a fortune in a short time. We think he was too sanguine in regard to the profits of the business; though, at the last-named price it might do. The fact is, at the present time, Catawbas and other good grapes are selling for twenty and twenty-five cents a pound; which price, after deducting all possible expense, will show a balance on the right side. Some have expressed a belief, that, as so many were entering upon grape-growing, the market would soon be surfeited with this fruit, and loss would ensue to the grower. We remember that twenty-five years ago, when few grapes were produced, good Isabellas sold for six to ten cents a pound; and now, when a thousand times as many are raised, they bring the prices we have given above. The fact is, our country is large, there are a great many to consume, and the consumption of fruits and vegetables is enormous compared with former times. Almost every person in the community who can afford it has fruit on his table daily, where, years ago, it was never seen, nor scarcely thought of. Tons of grapes are sold in our streets by peddlers, where formerly never a bunch was seen; and the demand for fruit will continue, and even increase, so that we need not look for any great reduction of price for several years. We repeat then, that grape-growing is one of the most profitable branches of fruit-culture, and would be with the fruit at half the price it now commands. When it falls to a low price, the wine-makers stand ready to purchase and use the whole crop. Our advice to a young man who wanted to engage in fruit growing would be to look over the country, select the best grape-land, and plant a vineyard, and he will in a few years be able to sit under his own vine and fig-tree in a double sense.—*Jour. Hort.*

✻ A correspondent of the "Country Gentleman," in giving some excellent hints in regard to the care of sheep, states indirectly the average number of lambs raised from forty sheep, and the price they bring, also the weight and prices of his fleeces, from which it appears he realizes about \$275 per year, from 40 head of coarse-wooled sheep.

Profit of Apple Growing.

The apple is the great standard among fruits, as wheat is among grains, or potatoes among vegetables. Some localities, of course, give better returns than others, but everywhere the apple is looked to for a crop as is the potato, and it depends much on the cultivator's skill in managing and selecting varieties as to the amount of returns. Niagara County, N. Y., is put down this year at 180,000 barrels, and in that county one tract of apple orchard produced for sale 600 barrels of fruit, which sold at \$3 per barrel. One tree of Rhode Island Greenings produced *twenty-six* barrels. H. T. Brooks, Esq., at the New York State Fair, during one of the evenings discussion, gave, among other evidence of the profits of apple growing, the following:

"A tree in Middlebury gave 11 barrels: four trees in LeRoy, 13 barrels each. Patrick McEntee, of Perry, took 14 barrels of Baldwins from one tree, and sold them to A. W. Wheelock for \$60. Mr. True, of Castile, took 15 barrels of Gilliflowers from a single tree. Enos Wright, of Middlebury, sold the product of two trees for \$100. Two years ago Mr. Hammond, supervisor of Middlebury, sold the product of 33 trees of Northern Spys for \$900. C. Cronkhite sold the apples on less than four acres for \$1,000; they were immediately resold for \$1,500. He said that Edmund Morris, the admirable author of 'Ten Acres Enough,' who, by-the-by, with the usual consistency of preaching farmers, had added 13 acres to his 'Ten,' wishing to do some tall bragging, had told us of 20 apple-trees that paid their owner \$225 one year. Here, said Major Brooks, is a story to match: Robert McDowel, of York, Livingston County, has 22 trees, grafted nineteen years ago to Dutch Pippins, Greenings, Russets, etc., standing 35 to 40 feet apart—his soil sandy loam, annually ploughed and cropped, being also heavily manured every year, and protected by woods on three sides. He sold from these trees, after reserving his culls, in 1865, 163 barrels of apples for \$779. 50.

"Prescott Smead, of Bethany, Genesee County, from six acres, on clay and strong clay loam, sold as follows:

1862.....	770 barrels.....	\$2370
1863.....	590 ".....	1790
1864.....	600 ".....	2100
1865.....	810 ".....	4500
1866.....	150 ".....	863
1867..(estimated).....	600 ".....	3,000

"Add to the above, copied from his income report (and reports of this kind are not apt to be overstated,) apples used in the family, and we have 100 barrels to the acre, and 2½ barrels to the tree *annually*, for the whole six years, paying \$400 per acre every year for the whole term.

"For practical cultivators there is another fact of great significance. This same orchard, after coming into full bearing for some ten years, received only ordinary care, which means scarcely any care at all, and its returns were very meagre. It was then heavily manured, ploughed shallow, and suffered to lie one year; then cross-ploughed and harrowed, and suffered to lie two years longer, all the time uncropped; then it was manured again, and the same treatment repeated. The results were as has been stated.

"S. P. Lord, of Pavillion, bought a neglected, and, of course, unfruitful, orchard of seven acres—trimmed, manured, and ploughed—it, when it immediately commenced bearing, and during the next six years yielded \$6,000.

"He recommended careful and moderate annual pruning where necessary, as contrasted with the too frequent slashing to which trees are subjected—keeping the heads of the trees low, which would favor ease in picking—objected strongly to the common neglect of cultivation, and also to the close cropping of the ground, in the attempt to obtain other products from the soil, the strength of which should be given to the trees. He cited cases where good clean culture had given high profits, and added that in nearly every instance where very large crops had grown on single trees, he has found those trees to stand near wood-piles, slop-grounds, barn-yards, or on other spots where they received a good supply of enriching material.—*Horticulturist*.

ASTRONOMICAL MOVEMENTS OF PLANTS.—M. Ch. Mussel has published a paper endeavoring to show that certain characters of the trunks of trees are related to the movements of the earth. The trunks of trees, he says, are always flattened in the northerly and southerly directions, and expanded in an east and west plane. He states that he could support his theory by several thousand examples, and that his views are thoroughly in accordance with astronomical laws.—*New Eclectic Magazine*.

"Back to the Land."

It is not often that we find occasion to dissent from the progressive opinions of English reformers; but we must confess much surprise at the views taken by Mr. Bright, Professor Fawcett, and others of that school, upon the question of landholding. These gentlemen appear to have conceived the idea, that the system of peasant proprietorship is the panacea for the present degradation of the lower classes of English society, and are raising the cry of "back to the land." It is singular that these eminently practical economists should have overlooked the fact that the present tendency of the cultivation of land in England is in a totally opposite direction. Nothing is more patent than the English farmer, in order to compete with farmers of other countries, requires all the economy connected with labor-saving contrivances, and all the advantages of the most advanced system of manuring; so that a large capital is now essential to successful farming. So necessary is ample means that the smaller class of farmers, with no working capital, are literally starving on their farms, while the wealthy class are making money. With such a tendency of affairs, it is clear that to reduce still further the size of the farms, and to give the lands into the hands of men of still smaller means, would be to annihilate the farming interest. The agricultural interest is undergoing the same change as has passed over manufactures. The economy of management that can be effected by capital, and by conducting affairs on a large scale, is annihilating the small farmers, as it has already displaced the smaller manufactures. And in the long run, it is well that this should be the case. There are a thousand good positions in the world's great workshop which those thus displaced can occupy, to the advantage equally of themselves and of society.

The inevitable result of this tendency must be to drive a portion of the farming population of England to countries where land is cheaper and its culture less costly. The capital a small farmer has invested in stock and farming implements would enable him, in the United States, to purchase a farm that would yield him a handsome profit from the first year of its occupation. Mr. Bright would render the poverty stricken masses of the rural districts much more sensible advice were he to recommend them to carry their means,

muscle and experience to the United States, or Australia, or Canada, where both would be much more available, and would yield a more remunerative result. If the position of the masses of England is to be materially ameliorated, it must be by the emigration of a portion to less crowded countries. The cure is in depletion; legislation, except so far as it may remove industrial obstructions, can be of no real avail.—*U. S. Economist.*

Gapes in Chickens.

J. C. Thompson, of Staten Island, in a recent number of the *Cultivator*, says on this subject, in reply to a Kentucky correspondent:

I had always attributed my success to cleanliness of the breeding fowls, freedom from lice, and mode of feeding, and had come to the conclusion that the gapes originated in some way from lice, many insisting that the knits were inhaled into the nostrils and lungs, and then generated into worms. But after reading the article of your Kentucky correspondent, showing, as all well know, how well poultry do that have a wood rambling ground, and having also frequently observed how well both hens and chickens do that are kept on rivers, bay or seaside beaches, where they have clean places to run on, all of which fully confirms the correctness of Mrs. G.'s views as to clean grounds for young chicks, to prevent gapes.

It had not occurred to me before, that my chicks had these advantages, and this was the cause of their freedom from gapes.

My practice is to take mother and chicks from the setting-rooms, (a place provided for all setting hens,) to near the dwelling house, about four hundred yards from the poultry-yard. They are then placed in sheltered positions where they can get the morning sun, and have a run on ground that is turned over two or three times a year, and sowed with grass seed at each turning, the ground being occupied with raspberry, blackberry, peach, pear and shade trees, with openings affording ample sun and grazing runs.

My success is complete, scarce ever losing more than three to five per cent. of chicks per hundred.

Now do not these facts and practice here referred to, clearly show that clean new ground for a chicken run, is a sure preventive of the gapes?

The American Farmer.

Baltimore, May 1, 1868.

TERMS OF THE AMERICAN FARMER.

SUBSCRIPTION TWO DOLLARS PER ANNUM.

RATES OF ADVERTISING:

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PUBLISHED BY

WORTHINGTON & LEWIS.

New Office, 4 South Street,
Near Baltimore Street,
BALTIMORE.

SUBSCRIPTIONS.—We beg the attention of our friends, to whom bills have been forwarded, to the great need there is of punctuality on their part to enable us to do ours. All the requirements of us for paper, printing, rent, &c., must be promptly met. It would not be possible to do it if those who owe us assume, that their obligations are not so urgent.

 Remit by mail at our risk.

SUPERINTENDENT OF AGRICULTURE AND IMMIGRATION.—Dr. McPherson, Superintendent of Agriculture, has located his office at No. 31 North Calvert street. We are glad to learn that in the performance of his important and responsible duties, he will have the valuable assistance of L. Giddings, Esq., of Anne Arundel county, who, as member of the Constitutional Convention, originated the article under which this Department was instituted.

THE EARLY GOODRICH POTATO.—A diligent reader of the *Farmer*, prompted no doubt by its suggestions, planted Goodrich potatoes last year on very poor ground, using two tons of Peruvian guano. He has sold from the crop \$900 worth, and is not done yet. We wish him to furnish us all particulars of cost and product.

Let us say, that it is very unwise to be planting the old rotting kinds, when the Goodrich, Harrison, Monitor, &c. can be had, and do not rot.

A Word to Friends.

A subscriber to the *Farmer*, who dates from Salem, a hundred miles up the Virginia Valley writes:

"It is needless to say I am delighted with your valuable journal, as its sterling merit and fine moral tone will commend it to all lovers of worth and truth. When I open your monthly, I consider you are my friend and—
I am yours, truly, &c."

We give this as a sample of letters we are in frequent receipt of, which give us the assurance, if we needed it further, that *The Farmer* has a substantial and reliable hold upon its readers, such as we have always sought to secure, for it. We have constantly eschewed the mode generally resorted to, of drumming for subscribers by all sorts of arts and devices, offering large rewards in the way of pianos, washing machines, and every conceivable gift that could tempt agents to make up a list. We believe this method to have been often very successful, but there are objections to it which we have not yet overcome. Our list of subscribers is in consequence, such a one as has grown naturally from the desire to have the use of such a journal as we have been able to make ours. It is a thoroughly legitimate agricultural subscription list, growing and gathering from the best agricultural population of the country.

We mention the subject now, in anticipation of a new volume to begin with July number, and ask the favor of subscribers to help our design of enlarging the number of such as we now have, not by asking every man they meet to subscribe to it, but such of their friends as they think will, at once, appreciate it and be benefitted by its use.

"JAPAN SPRING WHEAT."—The advertisement under this heading, came too late last month to go into our regular advertising form, and was printed on a slip and enclosed with each number issued. We did not see a specimen of the article advertised, and, had we seen it, had no opportunity of saying what we now say, that it is no wheat at all, but a variety of the *Sorghum Vulgare*, known in some of the Southern States by the name of *Doura*—in other places called *Indian Millet* and *Guinea Corn*. It seems impossible that any one could have been deceived as to the character of this plant.

MR. JOSEPH HARRIS.—This gentleman, for many years editor and proprietor of the *Genesee Farmer*, and for two years past a regular contributor to the *American Agriculturist*, has been appointed *Resident Professor of Agriculture* in the Cornell University of New York. We learn from the *Agriculturist*, that arrangements have been made with Mr. Harris to continue his connection with that journal.

We copied last month an article from the *Rural New Yorker* under the heading "Value of Manure from different Animals," in which, as we thought, there were well taken exceptions to a theory of Mr. Harris, that "the value of manure from any animal depends entirely on the food." In doing so, we are sorry to have given further publication to a sneer with which the article concludes, as follows: "He should have a good sound basis of facts for his conclusions, instead of deriving them from such absurd assertions and theories as those uttered by the newly-fledged Resident 'Professor of Agriculture' (!!) in what is designed to be the leading Agricultural Institution of America."

We disclaim, distinctly, any sympathy with so disparaging a notice of Mr. Harris. We have sincere respect for his ability and attainments, and do not doubt that he will devote himself with perfect integrity to the duties of his new position. It is one, however, that it is hard to fill, and we shall look with more of interest than confidence to the results of the magnificent experiment now instituted in the Cornell University, in which Mr. Harris holds so important a place. We wish it and him the amplest success.

A Word for Young Men.

The two articles *The Profitableness of Small Fruit Culture*, and *The Profits of Apple Growing*, will be read with interest generally, but are designed for our young men especially, as suggestive of what any one of them may accomplish, in a measure at least, if he will at once, first plant himself on a piece of ground, only five or ten acres, if he can get no more, and then begin to plant trees. There are but few, we think, who have any conception of what can be accomplished, in this direction, by the intelligent use of their own strong arms, diligently and steadily applied to the working of even a little land. The old fashion of farming in Maryland and Virginia, with its

broad acres, now, more than ever, badly cultivated, is a dreary business, dull enough to drive off our young men to the poorer occupations but more attractive life of cities. But is not this business of fruit growing a very different matter, where every dig of the hoe, and every plunge of the fork, tells, in grapes and pears, and apples and peaches, the prices of which go up, with increased production, and make a comfortable fortune a sure thing, if only a few acres be faithfully worked.

Fruit growing will be overdone, it is said, and so it was said twenty years ago. "It will not do for everybody to cultivate fruit." Everybody will not do it for various reasons.

We speak particularly to young men, of reasonable intelligence, not afraid of a little hard work, and who wish to secure themselves a comfortable and independent position in life, with only small means to start upon. Get a little land—very little will do, put your personal expenses at the lowest point consistent with health and a decent respect for the opinion of your neighbours, use every dollar at command in stocking with such fruits first as will bring the earliest returns, and then others, such as standard pears and apples, which begin to pay later, but last longer. Care will be taken of course to give the land the best, but not the most extravagant cultivation.

The labour required in such occupation is accompanied with so much of interest and pleasure as to make it a very different life from the drudgery of common farm work; and will be found sufficiently profitable in annual returns and increased permanent value of property to give the owner much more command of his time, and much more opportunity for self-culture, than he is likely to have in any city employment whatever.

"How it is."—A poor fellow in Roanoke county, Va., writes:

"You had better mind how you trust a rebel. I like the *Farmer*, but dislike to see it coming when I have not paid for it. Hold until a poor Reb. gets two dollars ahead. I have a young Reb. to maintain, and had to buy him a crib to-day. So you see how it is."

The *Old Farmer's* compliments to the baby—wishes him joy of his new crib—hopes he will escape the colic—not tear his own eyes out when he gets mad—nor require papa to walk him up and down the room an hour every night, in his—night clothes—except in warm weather.

"A Fair appointed by Act of Assembly."

To Maryland and Baltimore belong the credit of the first Cattle Show and the first Agricultural Journal of the New World.—*The American Farmer*, as our readers know, commenced publication as a Weekly, devoted exclusively to Agriculture, the 1st of April, 1819, many years, we believe, before the establishment of any other successful journal of the same kind.

The first Cattle Show held in America, of which there is any record, was "appointed by act of Assembly" to be held "in Baltimore town on the first Thursday, Friday and Saturday in October, 1747."

We give the spirited proceedings of "the Commissioners of the said town" of Baltimore, as taken from the Maryland Gazette of September 8th, 1747, published at Annapolis, then the Metropolis of the State, while Baltimore was but an aspiring village:

"Whereas there is a fair appointed by act of Assembly to be held in Baltimore town on the first Thursday, Friday and Saturday in October, yearly, the commissioners of the said town hereby give notice that whoever brings to the said fair, on the first day thereof, the best steer, shall receive eight pounds current money for the same; also a bounty of forty shillings over and above eight pounds. The said steer afterwards, on the same day, to be run for by any horse, mare or gelding, not exceeding five years old, three heats, a quarter of a mile each heat, not confined to carry any certain weight. The winning horse to be entitled to the said steer, or to eight pounds in money, at the option of the owner.

"On Friday, the second day of said fair, will be run for the sum of five pounds current money, by any horse, mare or gelding, the same distance, not confined to carry any certain weight. Also a bounty of forty shillings will be given to any person who produces the best piece of yard-wide country-made linen, the piece to contain twenty yards.

"On Saturday, the third day, a hat and ribbon will be cudgelled for; a pair of pumps wrestled for; and a *white shift* to be run for by negro girls.

"All persons are exempt from any arrests during the said fair and the day before and the day after, except in case of felony and breaches of the peace, according to the tenure of the above-mentioned act."

The Baltimore City Council, true to its

traditions, has just appropriated the handsome sum of \$25,000 for the purchase of grounds for the State Agricultural and Mechanical Association, as will appear by the following resolution:

Resolved by the Mayor and City Council of Baltimore, That the sum of twenty-five thousand dollars be and the same is hereby appropriated to the Maryland Agricultural and Mechanical Association, on such conditions and restrictions as may meet the approval of the city counsellor and city solicitor; provided, however, that said amount shall be invested in lands suited to the purpose of said association: and in the event of said association ever becoming extinct, the said lands and all enhancement or increased value thereon shall revert to the city of Baltimore; and that any and all lands purchased under this authority shall be vested in a board of trustees, so that the city's interest shall be paramount to all others.

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A subscriber at Fayetteville, N. C., inquires whether artichokes will make a good permanent winter and spring pasture for hogs. The Jerusalem artichoke is said to be very well adapted to the purpose—the hogs being allowed to harvest the tubers at pleasure.—They should be planted and treated very much as Irish potatoes, except that less seed may be used. Five bushels may be made to plant an acre. They should not be planted without understanding that they are difficult to get rid of, and are considered a nuisance in arable land. Being once planted, the hogs may consume what they can, and will still leave enough to produce a crop next season. A good lawn requires deep and rich soil, and is recommended to be sown first with several grasses, such as timothy, red-top, Kentucky blue grass, white clover, Italian rye grass, &c. Such varieties give a good sod quickly, but our natural green grass is the best reliance, and will come of itself, if the ground be made to suit it—rich and deep. Buckwheat grows well on any soil, but if very poor, must have moderate manuring. Half bushel of seed to the acre. Sow after 15th July.

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The National Publishing Co. are shortly to issue "The War between the States," by the Hon. Alexander H. Stephens, a work that is looked for with much interest, and no doubt will be valuable. Agents are wanted throughout the country. See advertisement.

Book Table.

The Southern Review.—We notice with gratification the high character maintained by this Baltimore Quarterly. No one who would be familiar with the best Periodical literature of the day, can dispense with this Review. The number for April treats the following topics: *The Nature of Civil Liberty. Federal Policy and Northern Prisons. Salem Witchcraft. George Eliot as a Novelist. The Missouri Compromise of 1820. Gothic Architecture. The Earth and Earthquakes. The Evolution Hypothesis. School Readers. Ananias. Maximilian; His Travels and his Tragedy.* Publishers Bledsoe & Browne. \$5 per annum.

The New Eclectic for May is already received, and is, in its way, equally creditable to Baltimore. The articles are not confined strictly to selections from foreign Magazines and Reviews, and we observe in this number an Educational Department. The articles are, *Lamartine, from the London Review. Casual Kindness, the Victoria Magazine. The Swallows of Oiteaux, Fraser's Magazine. Phineas Finn, the Irish Member. Mr. D'Israeli, Premier of England. In the Fields. The Woman's Kingdom. "Ecce Homo." Retirement from business. Scientific Memoranda. Miscellany, &c.* Address box 1484, Baltimore. Price \$4 per annum.

The North British Review for March—Reprint of the Leonard Scott Publishing Co., 140 Fulton St., N. York. The contents of the number: *Trade Unions. French Criticism—M. Renan. The Financial Relations of England and India. Recent Spanish Romances. Popular Philosophy in its Relation to Life. Montelembert's Monks of the West. The Queen's Highland Journal. The Atomic Theory of Lucretius. Ireland.*

The Northern Monthly. Contents: *The Thief in the Night. The Experience of a Military Missionary in Va., Booker Lawson, Forty-four Guns. A Plea for Good reading. Major Gen. Kilpatrick. Stranded, not Wrecked. The Metropolitan Pulpit. The Delusions and Decors of Dress. Editorial Department.* Price \$3. M. R. Dennis & Co., 132 Nassau St., New York.

American Naturalist for April. A popular, illustrated Magazine of Natural History.—Salem, Massachusetts. \$3 per annum.

"The Galaxy."—The May number received only in time to enable us to give table of contents, and to say that it is greatly enlarged. Contents: *The Black Bee. Our Millionaires. The Trumpet Smith. Personalism. The Shadow on the Wall. Clementina Kinniside. Soldier-Statesmen. The House and the Heart. The Pilgrimage to Mecca. Woods and Waters. Beechdale. Words and their Uses. Five Years in Japan. Steven Lawrence, Yeoman. Wreck. The Galaxy Miscellany. Drift-wood. Literature and Art. Nebulae.* Price \$4. Sheldon & Co., Nos. 498 and 500 Broadway, New York.

"The Baltimore Leader."—We have the first number of this new *"Weekly Journal of News, Literature, Politics, Economy and Art."* It promises to be a valuable addition to our weeklies, and wisely gives considerable space to Agricultural and Horticultural topics.—Price \$3. Address "The Leader," 20 South street.

Second Report of the Trustees of the Iowa Agricultural College, to the Governor and General Assembly.

Address delivered before the N. Y. State Ag. Society at the annual meeting. Albany, Feb'y 12, 1868. By Marsena R. Patrick.

Address of John W. Garrett, President. Made 12th Feb'y, 1868, at the monthly meeting of the Board of Directors of the Baltimore and Ohio Railroad Co. Printed by order of the Board.

The Resources of Missouri, by Sylvester Waterhouse, St. Louis. An exposition of the advantages which Missouri offers to the immigrant.

The Wool-Grower's Manual. A treatise on Sheep Husbandry in Missouri, by Sam. P. Boardman, Lincoln, Illinois—L. D. Morse & Co., St. Louis, Mo. Price 25 cents.

An Essay on the Cultivation and Curing of Flax and Hemp in Missouri. By L. A. Clemens. L. D. Morse & Co., St. Louis. Price 25 cents.

Select Catalogue of Roses of Special merit, and New Plants, Green House, Hot House, Bedding and Early Herbaceous Plants from Joseph W. Vestal, Cambridge city, Indiana.

Catalogue of Agricultural and Horticultural Implements, Machinery and Hardware, and of Improved Live Stock. Published by R. H. Allen & Co., New York, March, 1868; 272 pages; price, \$1 by mail, post-paid. Every farmer and dealer in implements should have a copy of Allen's new Catalogue, to see what a host of things are made in this line, and illustrated on every page of this work, which is rather a pictorial dictionary of implements than a simple catalogue, showing between five and six hundred subjects, finely illustrated. Send a dollar to R. H. Allen & Co., 189 Water street, New York, for this complete encyclopedia of implements. This elegant Catalogue is well worth the price to any one who takes an interest in agricultural implements. It gives a list of prices too.

SHREVEPORT, LA., March 4th 1868.

Editors of the American Farmer:

DEAR SIR: As a subscriber to the "American Farmer," I have observed among your advertisements, one of what is called "The Star Drill," and I desire to know your opinion of its usefulness, capacity, &c. I wish to learn its cost, the horse power necessary to run it, and whether it is preferable to other machines of the kind.

I am about engaging in the cultivation of small grain, in this portion of Louisiana, where our people have little or no experience or knowledge in regard to crops of that description. I should be pleased to be informed on the subject, and especially in relation to the best approved machinery used on wheat farms, and also as to the fertilizers most generally used and preferred on wheat lands.

I have a desire to encourage others to engage in the production of small grain in this part of our State; and think, by the introduction of labor-saving machinery and implements, and of fertilizers, I can easily do so. But as yet, we know nothing on the subject, having been formerly exclusively employed in the cultivation of corn and cotton crops. We do not know, for instance, the quantity of *guano* that should be put upon an acre of land intended for wheat—nor how it is prepared before it is put on the land—nor whether before or after ploughing, &c.

For the benefit of our correspondent and many others in the same case, we will give in our June number such information as they may need on this important topic to our Southern friends.—ED FARMER.

Remarks on a New Mode of Curing Tobacco.

Dr. G. W. Dorsey, a citizen of Calvert Co., Maryland, has patented a method of curing tobacco by furnace heat, and after some years of careful experiment, seems to have brought it to a successful issue. We have never doubted the practicability of this mode of curing, and have wondered that it has not sooner been brought into use. Curing by the slow process of air drying, is a most imperfect mode at best, and too often results in great damage and loss from long continued damp weather. Yet this has been preferred generally in Maryland to the mode of curing which runs the risk of open fires, and subjects the tobacco to the effect of smoke. In the upper counties of Maryland, the fine tobacco of that section, which is an entirely different article from that of the lower counties, is cured with stone flues in small houses holding less than two hogheads. This method is an imperfect one, but is, we believe, the common practice there. In Southern Virginia and N. Carolina, the risk of curing with open fires is obviated, in a measure, by burning the wood to charcoal first, and using that material. Stove heat has been tried years ago and abandoned as objectionable; for what reason we do not know. Dr. Dorsey's furnace, according to his account of it, obviates all difficulties; is safe from destruction by fire, gets rid of smoke, can be properly regulated, the tobacco is not effected by it in any way that buyers object to, but its value in quality is more than trebled.

Without in the least discrediting the statement of Dr. Dorsey, we must take it with the allowance which necessarily attaches to personal interest, and that *paternal* interest which the best of us take in the offspring of our bodies and our brains. We see it stated in a county paper, that at least a hundred of these furnaces will be sold this season in Calvert county. If it be true, it as an assurance of confidence where there has been the best opportunity of knowing their real value. But there is a word of caution due to those not familiar with the whole process of tobacco growing. Dr. Dorsey is an experienced tobacco planter of many years, and with the aid of that experience, he has carefully and intelligently worked out what may be called a revolution in tobacco planting in Maryland. He has been many years making trial of this mode of curing, (his furnace

having been, we think, patented some ten years ago) and has had the benefit of this experience in its use. We do not know that there is any serious difficulty, or any thing that requires much experience, in the management of it, only, we suggest, it is not to be assumed that what Dr. Dorsey has done can be done by others until they bring to bear upon his mode of planting and curing, some degree of the experience, intelligence and interest he has bestowed upon it.

Dr. Dorsey combines with his method of curing, a system of very high culture—especially so far as manuring is concerned. For his tobacco beds, he “spreads evenly over the bed fine stable manure—or hog-pen;” after digging properly, he applies “1500 lbs. Peruvian guano and 1½ bushels of plaster” to the acre. After the plants are up he applies a “mixture of Peruvian guano and plaster; 500 lbs of the former to 1½ bushels of the latter to the acre.” This with the necessary digging and preparation, and estimating the stable manure at its proper value, would make the bed of one acre cost not less than \$150. One-fifth of an acre, however, is estimated as sufficient for Dr. Dorsey’s crop of 20 acres and would cost \$30. This seems to us unnecessarily extravagant, but is justified by Dr. D. in the importance, which we well understand, of an abundant supply of plants, early in the season.

For his field manuring, he gives “a moderate dressing of barn-yard manure, spread evenly on 20 acres”—afterwards “300 lbs. of a mixture of equal parts of Peruvian guano and Superphosphate of lime to the acre,” and again after planting “a mixture of Peruvian guano and plaster (a bag of the former to a barrel of the latter) was dropped, about a spoonful in the bud of each plant”—a cost including yard manure, of hardly less than \$25 to the acre.

In making a comparison of his old system of planting, when his crop was forty acres, with his present area of twenty acres, the manuring is thrown out, because, as it is said, the cost on 40 acres “does not vary materially from that expended on the 20 acres annually.” That is, the cost *per acre* for manure is about doubled on the 20 acres. We can but remark on this point, that the increased product per acre is far from corresponding with the increased cost of manuring; the average under the old system being a

product of about 35,000 lbs. to 40 acres, a little less than 900 lbs. to the acre; under the new 20,000 lbs. to 20 acres, or 1000 lbs. per acre.

With these remarks we commend to the attention of those interested in tobacco growing, the article below, which Dr. Dorsey has written for the *Maryland Farmer*. In almost every point of management it accords very closely with the instructions we have been giving through the columns of the *American Farmer*, in our monthly notes, since 1855:

As every thing connected with the growth of fine tobacco, depends so much upon the planter’s success, in having an abundance of forward plants, shall fully describe my method of preparing plant-beds, manuring, seeding, &c., since the adoption of which, I have never failed. Select a piece of virgin woodland, compact soil the most certain, South or South-western exposure preferred, and after removing woodbrush, &c., the leaves should be carefully taken off, to be followed by hoes, cleaning the land of grass, and any surplus vegetable matter that may make it too porous. After which spread evenly over the bed fine stable manure (made from corn blades) or hog pen, from wheat chaff. Hoe up the bed moderately deep, taking care to cover the manure as perfectly as possible; next remove the surface roots, with iron-tooth rakes, to be followed by chopping and pulverizing with hoe and rake, until the land is fine and in good order, when 1500 pounds Peruvian guano, and 1½ bushels of plaster, should be sown to the acre and carefully raked in. The land is then ready for the seed. After seeding, so soon as the bed is sufficiently dry, tread or pat with heavy hoes, or pass a hand roller over it, making the land smooth and compact. Young and rather small fine brush, should next be brought and the bed be neatly covered. This cover to remain until the last of April or the first of May, when the brush should be removed and the bed cleaned of grass and weeds. Owing to the sad havoc which the tobacco fly makes (some seasons) with the young and tender plants, would advise heavy seeding, say from three to four table-spoonful of seed to every one hundred square yards, and depend upon the tobacco bed rake (at the proper season) for thinning and regulating the stand in the bed. The time for raking is when the plants attain the size of a silver quarter, or immediately after the first picking. The first rainy day after which, top-dress with a mixture of Peruvian guano and plaster, 500 pounds of the former to 1½ bushels of the latter to the acre.

The teeth of the tobacco plant rake should be half inch wide, and placed in a wooden head half inch apart, 6 or 8 teeth are enough for one rake. The form of the tooth is very much like the figure 5, thus the upper part is inserted in a wooden head, in the centre of which is placed a handle, and the lower part is designed to be passed over the tobacco bed,

cutting off the plants just beneath the surface, and removing a thin crust of earth, thus allowing the sun and air to penetrate the roots of the remaining plants, which is a good working. The teeth should be kept sharp with a file. A bed containing 1000 square yards is amply sufficient, manured and seeded as above, and kept clean of weeds and grass, to plant twenty acres in good time.

The kind of soil best adapted to the growth of fine tobacco is a sandy loam, not rich, but in moderate heart, capable of producing, when well manured and cultivated 1000 pounds to the acre. Such was the character of the land upon which was grown the two crops referred to in my last communication. So soon as the land was clear of frost in the spring, I fallowed about seven inches deep, harrowed, and suffered it to remain in this condition until the first of May, when a moderate dressing of barn-yard manure was evenly spread on the 20 acres designed for the tobacco, and ploughed in very shallow; my directions being simply to cover the manure. I subsequently applied 300 pounds of a mixture in equal parts of Peruvian guano, and superphosphate lime to the acre and very thoroughly harrowed this in. At the proper time (preceded by the harrow) the land was checked very shallowed, 2 feet 8 inches each way and scraped, making a low flat hill. The crop of 1865 was planted between the 25th of May and the 10th of June—that of 1866 from the 27th of May to the 15th of June. Both crops were wed as soon after planting, as it was safe to do so, and a mixture of Peruvian guano and plaster (a bag of the former to a barrel of the latter having been intimately mixed for a month previously) was dropped, about a spoonful in the bud of each plant. The subsequent working was done almost exclusively with cultivators, passed through it alternately every 8 or 10 days, until of sufficient size to lay by. The result was a most rapid and perfect growth, maturing early and turning yellow in the field as it ripened.

I topped at the proper time unusually low, with a view to ensure the perfect ripening of the entire plant, and at the same time to get rid of the miserable, short leafed, tail-end tobacco, so common in the Maryland crop.

I would here remark, that by the aid of a good flock of turkeys and my regular force, I was enabled to prevent—that great pest—the tobacco worm, from doing any great injury.

CUTTING AND HOUSING.—Tobacco should never be cut until ripe, but never allowed to become over ripe, as the quality both in color and texture is seriously injured thereby. I would advise planters to watch daily the ripening process, and so soon as the plant has matured its growth, and assumed a pale yellow color, it should be cut and put in the house. The practice of some of cutting down large quantities, to lay in the sun, in advance of spearing and *shocking*, cannot be too severely condemned, as the leaves become so soft and pliant, as to stick together and are certain to get bruised in handling, but more particularly

in hauling large lands to the barn. I have often seen good and ripe tobacco so damaged in this way, that nothing but a very common article could be made from what ought to have been *prime* under good management. For some years, I have in common with the great bulk of tobacco planters in lower Maryland, adopted the system of spearing and *shocking* in the field, as being the most expeditious, if not the best way of securing this crop. And early in the season my practice is never to allow it to remain on the ground (unless over grown) more than a few minutes, but am cutting, spearing, and shocking at the same time. The spears-men shock, putting 4 rows of tobacco in heaps of 8 or 10 sticks, with the butts of the plant to the sun, and the sticks as near a perpendicular as possible; in these shocks, the plant will wilt sufficiently to be carried without breaking to the barn, and in this condition the leaves will not stick together or bruise in moderate loads. Before putting tobacco in the cart, it is important to have the boards of the cart-body covered with straw or weeds, so as to protect the bottom sticks from injury in slipping out.

That part of the article which relates to the curing, we will give in our next.

[3] The series of valuable articles on Colic and Bots in Horses, by Dr. Dadd, V. S., has been copyrighted, not for the purpose of preventing their use by our exchanges, but to enable the author to claim property in them hereafter and publish in another form.

TOBACCO CURING.—The attention of our Tobacco planting friends is called to the advertisement of Bibb & Co's celebrated Patent Tobacco Curing Apparatus.

THE CRANBERRY.—A subscriber at Scotland Neck, N. C., says: "Please give (through your valuable journal) from time to time the necessary information about the planting, cultivation and preparing for market the Cranberry." Will answer in June number.

[3] A certain insect lays 2,000 eggs, but a single tomtit will destroy 200,000 eggs in a year. A swallow devours 543 insects in a day, eggs and all. A sparrow's nest was found to contain 700 pairs of the upper wings of the cockchafer, though other food was procurable in abundance. So save the birds.

[3] Cotswold sheep are said to be in greater demand in England now than ever before. At a late sale, 55 rams averaged \$150 in gold.

The Busy Bee near Boston.

A somewhat unhappy occurrence has taken place recently in the State of Massachusetts, not far away from "the Hub of the Universe." It has not been noticed outside, in political or religious papers, and belongs appropriately, no doubt, to the agricultural and scientific. This is our apology if we give it more space than it may seem entitled to.

The good people of the town of Wenham, Mass., are interested in the matter of fruit growing, and have also determined in their minds, that the honey bee is unfriendly to that branch of culture. They think that instead of "gathering honey all the day," as taught by the divine Dr. Watts, he only goes about "like an evil genius, blasting the fair fruits" of the apple trees and pear trees, and have concluded that the busy bee must go about his busy-ness in some body else's fruit gardens. The town, by more than a two-thirds vote, has determined him a nuisance, and "the Select-men have ordered the bee-keeper to abate the nuisance, and take his bees out of town."

The *Boston Journal* says feebly, "some say the action of the town is of doubtful constitutionality," but this is of no account, since the bees cannot get their case into court. If they did, there is the two-thirds majority! What matter courts and constitutions?

But the educational and scientific view of the matter! It is a well ascertained fact in natural history, and generally known, (outside of Massachusetts,) that bees do no manner of harm, but, on the contrary, very good service, by their visits to the fruit blossoms. There is ample proof of this furnished, for those who need it, in the April number of the *American Naturalist*, published in Salem, in which we find recorded the doings of the good people of Wenham. Our respected contemporary exclaims in contemplation of their action, "can it be possible! and this in enlightened Massachusetts!" "Have we gone back to the dark ages," says a correspondent of that journal, "the age of belief in dragons, 'gorgons and chimæras dire?'"

We condole with our friends, and offer them comfort in the suggestion that there is some mistake about this thing. In the very face of Harvard, in the very presence of Agassiz, the Natural History Society, the Museum of Zoology, the School of Technology, and Amherst and Williams and Tufts College and

Wilbraham, and all the colleges, and all the academies, and all the common schools, and universal education, and Concord and Lexington and Bunker Hill—but we forget—our feelings carry us away. We have been reading, in the *Massachusetts Ploughman*, a speech of Dr. Loring's on what "Massachusetts has done, and is doing, to educate her people up to that standard, which is required by all the usages of society here, and by the responsibilities which rest upon the citizens of this State," and thus informed, we reject as impossible, the ignorance theory in this story. Feeling safe from such an imputation, the Wenhamites are modestly disguising some other motive against the bees; their form of government perhaps being not republican; or something in the way of good morals. Indeed, while naturalists assure us that bees are wise above all insects, except perhaps the ant, and proof is given of their ability to reason, it is conceded, we think, on all hands, that they are without moral character. Is not here a more probable explanation of the action of a Massachusetts community?

We should be glad, if space allowed, to give, in full, the speech of Dr. Geo. B. Loring, to which we have alluded. This gentleman is President, we believe, of the State Agricultural Society, and is addressing the committee of the Legislature in favour of an appropriation to the Agricultural College. Let him be quoted further, to convince the gainsaying of the impossibility of this horrible charge of ignorance. "I desire," says the orator, "to remind the committee of the position which Massachusetts holds to-day upon this matter of education. It does seem to me that gentlemen in this Commonwealth are in the habit of forgetting what Massachusetts has done and is doing to educate her people up to that standard, which is required by all the usages of society here, and by the responsibilities which rest upon the citizens of this State. She began in the earliest colonial days to devote herself to the cause of education, and from that time to this, has gone on appropriating money for the benefit of good knowledge within her limits. I have endeavored to ascertain, as nearly as I could, what this Commonwealth has done towards encouraging—not the primary schools, nor the normal schools, nor the high schools alone, but specific, individual institutions," &c. Then follows an enumeration of institutions to

which had been voted, at sundry times, "freely and fairly," "liberally and freely," and by a "free and liberal vote," "which has always been considered a fair and proper thing"—\$25,000 to one and \$25,000 to another, through a long list. "Take the Natural History Society," says the doctor. "Why, gentlemen, sometimes the students of this branch of science are ignominiously called 'bug hunters,' (O, shame!) But the Commonwealth appropriated \$50,000 worth of land for that institution, and it has always been considered a fair and proper thing for the Commonwealth to do. The Museum of Zoology. What does that mean? It is that institution, which, through the guidance of Professor Agassiz, the great naturalist, stands foremost in the world, in the rank of such academies. How much for that? \$140,000 in money—not in land, nor copper stocks, nor oil stocks"—(nor any such trash)—"but solid cash," (real paper money.) "Does anybody complain of it? No." (Now give ear, O earth!) "And when a gentleman in the House undertook to cast ridicule upon that institution, the House rose in mass and voted—to confer upon it \$10,000—just as freely as it gave money to save the State from ruin in the Rebellion"!!! We hardly know where to stop the exclamation points—not on account of that little fling at the Rebellion—[Dr. Loring was one of those Massachusetts Democrats, who, like General Butler, was calumniously charged with helping to incite the Rebellion, and whose conscience moves him continually, to keep kicking the dead Lion, on all suitable occasions.] but because of the impression it makes upon us of Educational—not heroism exactly, but if we may coin a word—heroics-ism. See that solid mass of solid men!—such men as grow only in Massachusetts—rising from their seats to vote \$10,000 to an institution, not because it needed it, for they had already given it \$140,000—but to mollify its hurt feelings, because "a gentleman in the House undertook to cast ridicule upon it."

In the presence of such a fact, what becomes of this miserable scandal, of ignorance charged upon two-thirds of the "woters of Wenham?"

Peas and beans, when consumed on a farm will furnish a manure rich in ammonia, an element which is the delight of all cereals. Peas give the soil an admirable preparation for winter wheat.

For the "American Farmer."

How to Learn Rational Farming.

CLIFTON, FAIRFAX Co., VA., April, 1868.

MESSRS. EDITORS: In your number of this month, I notice an extract from the "Paris Correspondent of Land and Water."

If it is our earnest desire to introduce rational farming in our country, we will have to adopt the institutions mentioned in the above named extract. It is fully as essential for the farmer *himself* to be versed in ALL the different labors executed on a farm, as well as to be able to practice to some degree the different mechanical professions connected with agricultural operations, as it is for the mechanic to serve his time to learn his trade. If a farmer *himself* is not able to show his hands *how* to do the work, he will not be able to command that respect which laborers always have for their superior in work. A farmer who intends to farm rationally with success, must *himself* have spent years in practicing the different kinds of work done on a farm, otherwise, he cannot judge *how* the work has to be done, nor how *much* of it *can* and *ought* to be done. Possessing this knowledge enables him to save many an hour and many a dollar through the year. He can judge and make a *correct* calculation of the work he wants performed, and arrange his work to the best advantage without loss of time. A farmer can never obtain this required knowledge on *one* farm, may this farm be conducted in the best style. The knowledge he obtains will always be local and whenever he changes the locality, he will have to pay *very dear* for the experience he has to gain under the different local peculiarities of the country he has come to. This disadvantage is largely provided against, if he has received an education at an agricultural college. At the college, he will be instructed as to the influence of the different climates on agricultural products, see different experiments made with the cultivation of different plants, which would be too expensive for a single farmer to undertake, and by this be enabled to avoid many a costly mistake. I am bold to assert, that there is no profession where a minute observation of the smallest details are more necessary and saving in money and time, than in "Agriculture." Where is the farmer that will deny that he has not paid dearly for knowledge obtained through costly experience, which might have

been saved, if he had had the opportunity to gain the proper information in time? I have seen farmers ruined by adhering to modes of farming, well adapted to the section of the country where they came from, but which were impracticable and disastrous in the section of the country they moved to.

It is no easy task to abolish a system of farming under which you have been prospering and adopt another totally contrary to your made experience. Only thorough instruction will make you willing to change your views, and this instruction you can only receive at an agricultural college.

Many a reader of this may "turn up his nose" and say "boah," I know better, but let me assure such farmers, that the present age requires a farmer to keep up with the times and increase his stock of knowledge whenever an opportunity is given him. The old system of working land down, clear new land, work that down, and so on, has "played out;" we have to farm so that what land we have under cultivation is improved by our farming system.

L. A. HANSEN.

Lice on Cattle and Sheep.

The spring is the season when most annoyance is caused by these parasites. We have so many letters asking for and recommending cures, that we are induced again to allude to that wonderfully effective destroyer of such vermin, *Carbolic Acid*. This is used in the form of soaps, which may be easily applied in water, making a moderately strong suds. Cresylic acid is a cognate substance, almost always associated with carbolic acid, and under the trade name of "Cresylic Soap," an excellent article is advertised and furnished. We have employed this soap to rid our shelves of ants, our cupboards of cockroaches, poultry of lice, dogs and cats of fleas, and not having occasion to use it upon our horses, or neat stock, have supplied acquaintances whose stables were infected. We have even prescribed a bath of Cresylic Soap and water for a newly arrived immigrant, and in every case of its application have had the satisfaction of learning of its efficacy. Farewell to mercurial ointment, that efficient, but very dangerous article in careless hands! So long as we can obtain carbolic compounds, we banish it.—*Am. Agriculturist*.

Embryological History of Oysters.

At the proper season, which is ordinarily from June till the end of September, oysters spawn, but unlike many marine animals, they do not abandon their eggs. They incubate them within the folds of the mantle, between the branchial lamina, where they remain immersed in a mucous matter necessary to their evolution, and within which the embryonic development is accomplished. Thus united, the mass formed by these eggs resembles thick cream in color and consistency; hence those oysters whose mantle contains spawn are called "milky oysters." But the whitish tint so characteristic of the recently-laid eggs takes gradually, as the evolution proceeds, a shade of light yellow, then a darker yellow, and ends by degenerating into brownish gray, or into a decided violet gray. The whole mass having at the same time lost its fluidity, in consequence, probably, of the gradual absorption of the mucous substance surrounding the eggs, has the aspect of compact matter. This state shows that the development is drawing near its completion, and that the expulsion of the embryos and their independent existence is near at hand, for already they are able to live without the protection afforded by the maternal organs. In fact, very soon the mother rejects the young hatched in the mantle. Forth they issue, provided with a transitory swimming apparatus, which enables them to scatter themselves far and wide, and to go in search of some solid body to which they may attach themselves. This apparatus is formed by a kind of ciliated pad provided with powerful muscles, by the aid of which the animal can at will protrude it from its valves and again retract it. When the young oyster has managed to fix itself, this pad, henceforth useless, falls off, or, what is more usual, grows smaller on the spot and disappears by degrees. The number of young ones thus expelled at each emission from the mantle of one single mother cannot be less than from one to two millions; so at the time when all the adult individuals composing an oyster bank give birth to their offspring, this living dust issues forth like a thick cloud, which dispersing far from the spot whence it emanated, and scattered by the movements of the water, leaves upon the cultch (*souche*) only an imperceptible part of the produce; all the rest disperses, and if these animalcules, wandering here and

there by myriads at the mercy of the waves, do not meet with something solid on which to fix themselves, their death is certain; for those which have not become a prey to the inferior animals which feed on infusoria, end by falling into a medium unsuitable to their ulterior development, and often by being swallowed up by the mud. Nevertheless, judging from the great thickness to which some oyster-shells have attained, this moluso is capable, if left to its natural changes unmolested, of obtaining a great age. Indeed, fossil oysters have been seen, of which each shell was nine inches thick, whence they may be considered to have been more than a hundred years old.—*Ex.*

Artificial Water and Food for Oysters.

The following recipe for the preparation of artificial sea-water will keep the oysters alive and supply them with natural food for some time: "For ten gallons it requires: sulphate of magnesia, $7\frac{1}{2}$ ounces; sulphate of lime, $2\frac{1}{2}$ ounces; chloride of sodium, $43\frac{1}{2}$ ounces; chloride of magnesia, 6 ounces; chloride of potassium, $1\frac{1}{2}$ ounces; bromide of magnesia, 21 grains; carbonate of lime, 21 grains. This should be allowed to stand exposed to the air in a strong sunlight for a fortnight before it is used, during which time a few growing plants of *enteromorpha* or *alea* should be introduced to throw off spores. The water then, when under the microscope, will be found to contain a confervoid vegetable growth, which forms as nourishing a food for the oyster as the spores of sea-weed in its ocean bed. Oysters laid down in a large trough and covered with this water will continue to live and thrive for months."

We clipped the above from an English journal and republish it, because it is highly suggestive of experiments which might be made, by our leading chemists, on a subject of national interest. The present able Commissioner of Agriculture, Col. Capron, for instance, might direct the chemist attached to his department, to experiment upon the possibility of preserving and feeding oysters at any point, however remote from the sea-board. The Smithsonian Institute, too—founded for "the increase of knowledge among men," and possessing every possible facility for the purpose—might perhaps be induced to descend to this subject, really of far more practical importance to "men" than all the mere spec-

ulations ever made upon Indian mounds. The subject was not beneath the dignity of the College de France, the experiments of which have done so much for pisciculture. With the people, on tide-water, in Maryland and Virginia, it is a common practice to lay in supplies of oysters for several months, and not only to keep them alive, but actually to improve them, by repeated sprinklings of Indian meal and salt water; and we have heard it stated by a cotemporary of Mr. Jefferson, that he always entertained the belief that oysters might be artificially bred in the far interior, and was only prevented by more serious occupations and the want of means from making the experiment at Monticello.—*Exchange.*

The Crow.

The crow is not fond of corn when it is coated with tar. A few trials of it disgusts him.—*Am. Farmer.*

"It is in the month of May and until the middle of June that the crow is most destructive to the cornfield, digging up the newly-planted grains of maize, pulling up by the roots those that have begun to vegetate, and thus frequently obliging the farmer to replant or lose the benefit of the soil; and this sometimes twice, and even three times, occasioning a considerable additional expense and inequality of harvest. No mercy is now shown him. The myriads of worms, moles, mice, caterpillars, grubs and beetles which he has destroyed are altogether overlooked on these occasions. Detected in robbing the hen's nests, pulling up the corn, and killing the young chickens, he is considered as an outlaw, and sentenced to destruction."

Nuttall says:

"The crow is equally omnivorous with the raven; insects, carrion, fish, grain, fruits, and in short everything digestible by any or all the birds in existence, being alike acceptable to this gormandizing animal. His destruction of bird-eggs is also considerable."

Audubon gives the following eloquent defence of this bird:

"The crow devours myriads of grubs every day in the year that might lay waste the farmers' fields; it destroys quadrupeds innumerable, every one of which is an enemy to his poultry, and his flock. Why then should the farmer be so ungrateful, when he sees such service rendered to him by a providential friend as to persecute that friend even to the death?"

Seeding Down Often.

Next to manuring, frequent seeding to clover and grass seed is of the greatest importance in making and keeping land rich and productive. Indeed when we consider the great advantage of a rotation in which frequent seeding is important as a change, and for growing a large amount of forage to feed to make manure, as well as to fill the soil with clover and grass roots—I say when we consider these objects and advantages, the question of frequent seeding seems to be of at least equal importance with that of frequent manuring.

But both are closely connected. The good farmer grows hay to feed to make manure, and seeds down his land to grow hay. If there is a want of manure, there is generally a lack of hay to feed and make it; and consequently need of seeding more or better, to grow more hay.

Plowing under a good clover sod is one of the easiest and cheapest means by which land can be improved. The crop of clover, if good, has already been profitable, and no one thinks of making any charge for, or account of a good clover ley; and yet it is often of as much benefit to the land as a moderate dressing of manure. This is especially the case when the clover has made a little growth, say from four to six or eight inches high, and is turned under while in full vigor. I have realized much benefit in this way; but not near so much as might have been secured, had the advantages of this practice been as well understood at the beginning, as at this time. Others have also written strongly in favor of this course. Prof. Johnston, Agricultural Chemistry, page 424, says:

"This burying of recent vegetable matter in the soil, in the form of living and dead roots of plants, is one of the most important ameliorating operations of nature, which is always, to some extent, going on wherever vegetation proceeds. It is one by which the practical farmer is benefitted unawares, and of which—too often without understanding the source from which the advantage comes, he systematically avails himself in some of the most skillful steps he takes with a view to the improvement of his land."

It is because many are not aware of the advantages of this course, and it is so likely to be overlooked on account of its ease and small cost, or rather freedom from cost, that

I wish to urge its importance on grain farmers.

But in order to realize these advantages, it is necessary to seed often. If land is kept under the plow as long as it will grow grain before it is seeded down, and kept in grass as long as it will produce any hay or pasture before it is again broken up, but little benefit will be realized. A worn out and run out sod affords but little fertilizing matter to turn under, and can do but little good. While plowing under a good clover ley, with the ground well filled with roots, two or three times during the same period, will make a very considerable improvement. In the first case the clover is all run out, and most of the benefits secured by its growth are used up by the succeeding crops of timothy and June grass; and these grasses, being exhausting crops, impoverish the soil besides, while in the latter case there is a large addition to its fertility. So that by only seeding at such very long periods, land must grow poor, notwithstanding all the manure that can be made, is saved and applied, while by seeding often, in a judicious rotation of crops, with the same pains in making and saving manure, land may be kept improving. At the same time such rotation and improvement will secure much better crops and larger profits.

But to secure these advantages, a liberal seeding is necessary. It is poor economy to try to save in this respect. A thin seeding gives a light crop of rather coarse hay, and a light, open sod to turn under, while a liberal seeding will give a heavier crop of much better quality, and afford a much heavier and richer sod to improve the soil. In this section not less than eight quarts should be sown; and where clover and timothy or a mixture of these and some other grasses is sown, more is better. But in a rotation where improvement of the soil is an object, clover should be the main reliance. Then, if sown alone, not less than a peck should be put on; if mixed with timothy, the proportion should be two quarts of clover to one of timothy and not less than ten quarts sown. Then clover is still the main crop, and timothy only added to more fully occupy the ground and produce a finer quality of hay.—*Country Gentleman.*

Mr. Sykas, of Lincoln, Del., grew some carrots last year that were two feet long and as thick as a man's leg.—*Er.*

The Preservation of Leather.

A contributor to the *Shoe & Leather Reporter* gives some valuable hints in relation to the preservation of leather. The extreme heat to which most men and women expose their boots and shoes during the Winter deprives the leather of its vitality, and renders it liable to break and crack. Patent leather, particularly, is often destroyed in this manner. When leather becomes so warm as to give off the smell of leather, it is singed. Next to the singeing caused by fire heat, is the heat and dampness caused by the covering of rubber. Close rubber shoes destroy the life of leather.

Shoe leather is generally abused in polishing it. Persons know nothing or care less about the kind of material used than they do about the polish produced. Vitriol blacking is used until every particle of the oil in the leather is destroyed. To remedy this abuse the leather should be washed once a month with warm water, and when about half-dry a coat of oil and tallow should be applied, and the boots set aside for a day or two. This will renew the elasticity and life in the leather, and when thus used upper leather will seldom crack or break.

The practice of washing harness in warm water and with soap is very damaging. If a coat of oil is put on immediately after washing, the damage is repaired. No harness is ever so soiled that a damp sponge will not remove the dirt; but, even when the sponge is applied, it is always useful to add a slight coat of oil by the use of another sponge. All varnishes, and all blacking containing the properties of varnish, should be avoided. Ignorant and indolent hostlers are apt to use such substances on their harness as will give the most immediate effect; and these, as a general thing, are most destructive to the leather. When harness loses its lustre and turns brown, which almost any leather will do after long exposure to the air, the harness should be given a new coat of grain black. Before using this grain black, the grain surface should be thoroughly washed with potash water until all the grease is killed; and, after the application of the grain black, oil and tallow should be applied to the surface. This will not only "fasten the color," but make the leather flexible. Harness which is grained can be cleaned with kerosene or spirits of turpentine, and no harm will result, if the parts affected are washed and oiled immediately afterward.

Band leather is often improperly oiled. When oil is applied to belting dry, it does not spread uniformly, and does not incorporate itself with the fibres as when partly dampened with water. The best way to oil a belt is to take it from the pulleys and immerse it in a warm solution of tallow and oil. After allowing it to remain a few moments, the belt should be immersed in water heated to one hundred degrees, and instantly removed.

Publication of the Reports.

The dissemination of the reports of this department is tenaciously adhered to by Congressmen, acting for and at the direct and urgent request of their constituents, notwithstanding occasional expressions of dissent from persons engaged in publishing agricultural books. Recognising the great utility of the distribution, and to some extent the reasonableness of a protest against issuing a mere agricultural compilation on general topics, the Commissioner has expressed his intention of restricting the acceptance of essays from outside sources and confining the matter mainly to the actual work of the department, thus making the annual volume in reality and exclusively a Report of the Department of Agriculture. No book publisher could then, on any pretext, object to their wide circulation, and all would concur with a correspondent—one of a multitude—who says: "They would increase the demand for such works by stimulating the appetite and awakening a desire for further investigation."

The Monthly Report cannot, in any sense, come under this protest, as it is not sent to individual farmers, but to the agricultural, metropolitan, and local press; to officers of agricultural societies; statistical reporters; meteorological observers; industrial and technical societies in this country and in Europe; and writers for the press. The design is simply to furnish useful data, officially obtained—much of it otherwise practically inaccessible—to the people, not directly, but *through the press*. Its office is to enlarge and enrich, in an agricultural point of view, the current matter of such publications, and not to compete or interfere with any of them in the slightest degree. If this aim is properly understood there certainly cannot be found a publisher with views so narrow or prejudices so small as to make possible the least hostility or jealousy in the case.—*Feb. Rep. Dep. Ag.*

Sunday Reading.

The whole mystery of Christ was made up of power and meekness. His conception was by the Holy Ghost, miraculously of a pure virgin; but the outside mean, His mother but an earthen vessel, the spouse of a poor carpenter. His birth made known and published by an angel; there is the heavenly treasure; but discovered, not to the great ones of the world, but to the poor shepherds. His lodging pointed out by a glorious star; and yet His cradle but a cratch, His nursery but a stable. Being in the wilderness, He was attended by angels; but see the poor outside, He was "among the wild beasts." In His agony He was full of trembling and horror; but then He was comforted from heaven by an angel. At His death He was crucified with thieves; but yet the power of heaven and earth trembled at it. The tidings of His Resurrection first published by an angel; but yet sent into the world by poor, weak women. A carnal eye saw nothing in Christ but weakness and infirmity; but a spiritual eye, in all these passages, "beheld His glory, as the glory of the only Son of God." The Gospel is so carried by God that Infidelity finds occasion to stumble, and Faith a sure foundation to stand.

When the Emperor Julian was about to wage war against the Persians, and had threatened, when the war should be over, bitterly to persecute the Christians, insolently mocking the *carpenter's Son*, as one quite unable to succor them, Didymus, an Ecclesiastic, pronounced this sentence upon him: "This carpenter's Son is even now making a wooden coffin for Julian!" (Julian died soon after.)

Consider the excellency of the text of Scripture itself, how things quite above reason consent with things reasonable. Weigh it well what majesty lies there hid under humility; what depth there is, with a perspicuity unimitable; what delight it works in the soul, that is devoutly exercised in it; how the sublimest wits find in it enough to amaze them, while the simplest want not enough to direct them.

However the devil labors to keep his own kingdom in peace and tranquillity, yet he seeks nothing more than to cause divisions in the kingdom of Christ.

To be short, there is nothing that more maintaineth godliness of the mind, and driveth away ungodliness, than doth the continual reading or hearing of God's word, if it be joined with a godly mind, and a good affection to know and follow God's will. For without a single eye, pure intent, and good mind, nothing is allowed for good before God.

Parables possess an inward marrow, different from what their exterior form would lead us to expect; and as gold is sought in the earth, the kernel in the nut, and the hidden fruit in the rough coating of the chesnut, so in Parables there is a Divine spirit and meaning which we must explore.

It is not without a definite mysterious intention, that the Lord appearing in our flesh, was pleased to be called and regarded as a *carpenter*, and *son of a carpenter*. For rather by this title He declared Himself "a Son" from before all ages, who "in the beginning created the heavens and the earth."

Few things remind us more strikingly that we live in a sinful, disordered world, than this; that our blessed Lord selects the most joyous season in the whole year, as a type of the most awful and stupendous event that can be conceived, the last judgment.

They, who prematurely put themselves forward to root out whatever is displeasing to them, overthrow the judgment of God, and rashly intrude upon the office of the angels.

How gloriously bright we may suppose the *souls* of men will be when even their bodies shall be as resplendent as the stars in the firmament?

It is, a sure rule, that whatsoever heights of piety, union, or familiarity any man pretends to; it is of the devil, unless the greater the pretence be, the greater also be the humility of the man.

The man wants to be robbed who makes a show of his treasure on the public road.

I have always found that such preaching of others hath most commanded my heart, which hath most illuminated my head.

NOTICE.—We have only time before going to press, to allude to a valuable invention, "The Sampson Platform Weigh Scale," one of which we have examined and tested at Mr. Washburn's coal yard, in this city, and which we think the most accurate, sensitive and durable scale we have ever seen. We learn that the Company intend establishing a large depot in Baltimore, and that, for the present, Messrs. M. Keith, Jr. & Co. are taking orders for these Way Scales. See June number.

Baltimore Markets, April 25, 1868.

COFFEE.—Rio, 15½a18 cts. gold, according to quality; Laguayra 17½a17½ cts., and Java 24½a25 cts., gold.

COTTON.—We quote prices as follows, viz:

Grades.	Upland.	Gulf.
Ordinary.....	26a28	00
Good do.....	29a29½	00
Low Middling.....	30½a31½	00
Middling.....		00

FERTILIZERS.—Peruvian Guano, \$30; California \$70; Rodunda Island \$30; Patapasco Co's \$60; Reese & Co's Soluble Pacific Guano, \$65; Flour of Bone, \$60; G. Ober's (Kettiewella) AA Manipulated, \$70; A do. \$60; Ammoniated Alkaline Phosphate, \$55; Alkaline Phos. \$45; Baltimore City Company's Fertilizer, \$40; do., Flour of Bone, \$60; do., Ground Bone, \$45; do., Poudrette, \$20; Baugh's Raw-bone Phosphate, \$56; Baugh's Chicago Bone Fertilizer, \$46; Baugh's Chicago Blood Manure, \$50; Maryland Powder of Bone, \$46; Rhodes' Super-Phosphate, \$55; Lister's Bone Super-Phosphate \$55; Berger & Butz's Super-Phosphate of Lime, \$56; Andrew Coe's Super-Phosphate of Lime, \$60;—all per ton of 2,000 lbs.; Pure Ground Plaster, \$13.50a\$14.00 per ton, or \$2 50 per bbl. Shell Lime slaked, 6c., unslaked, 10c per bushel, at kilns.

WHEAT.—Howard Street Super, \$10 50a11.25; High Grades, \$12 25a13.00; Family, \$13.25a14.00; City Mills Super, \$10.50a11.25; Baltimore Family, \$15.00a15.50.

RYE FLOUR AND CORN MEAL.—Rye Flour, \$10.25a10.50; Corn Meal, \$6.00.

GRAIN.—Wheat.—Good to prime Red, \$3.10a3.15; White, \$3.10a3.30.

RYE.—\$2.00a2.10 per bushel.

OATS.—Heavy to light—ranging as to character from 85 a95c. per bushel.

CORN.—White, \$1.12a1.14; Yellow, \$1 20a1.23 per bushel.

HAY AND STRAW.—Timothy \$21a23, and Rye Straw \$— a\$— per ton.

PROVISIONS.—Bacon.—Shoulders, 14½a14½ cts.; Sides, 16½a17½ cts.; Hams, Baltimore, 21 cts. per lb.

SALT.—Liverpool Ground Alum, \$1.95a2.05; Fine, \$2.95 a\$3.05 per sack; Turk's Island, 50a52 cts. per bushel.

SEEDS.—Timothy \$0.00a0.00; Clover \$0.00a0.00; Flax \$2 55a2.90.

TOBACCO.—We give the range of prices as follows:

	Maryland.	
Frosted to common.....	\$3 75a 4.50	
Sound common.....	4.50a 5.00	
Middling.....	7.50a 9.50	
Good to fine brown.....	10.00a15.00	
Fancy.....	17.00a25.00	
Upper country.....	3.00a30.00	
Ground leaves, new.....	4.00a13.00	
	Ohio.	
Inferior to good common.....	5.00a 6.00	
Brown and greenish.....	6.00a 7.00	
Medium to fine red and spangled.....	7.50a15.00	
Fine spangled.....	15.00a20.00	
Fine yellow and fancy.....	20.00a30.00	

WOOL.—We quote: Unwashed, 28a30 cts.; Tub-washed, 38a42 cts.; Pulled 30a36 cts.; Fleeces—a— cts. per lb.

CATTLE MARKET.—Common, \$6.00a7 75; Good to fair, \$7 00a8.00; Prime Beeves, \$9 00a10.75 per 100 lbs.

SHEEP.—Fair to good sheared, 6a7½; extra unshorned, 7a8½ cts. per lb., gross.

HOGS.—\$12.00a14.50 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by HEWES & WARNER, Produce and Commission Merchants, 18 Commerce street.

BALTIMORE, April 25, 1868.

BUTTER.—Western solid packed 25a45 and Roll 45a50; Glades,—a—; Goshen, 50a60.

BREXWAX.—38a40 cts.

CHEESE.—Eastern, 16a18; Western, 15a16.

DRIED FRUIT.—Apples, 6 to 7; Peaches, 8a10.

EGGS.—20a21 cents per dozen.

FEATHERS.—Live Geese, 60 to 80 cents.

LARD.—Western, 19; City rendered, 20 cts.

TALLOW.—12a12½ cents.

POTATOES.—\$1 50a1.60 per bushel.

NEW ADVERTISEMENTS—MAY.

Agricultural Implements, &c.—Richard Cromwell.

" " Jno. M. Griffith & Co.

" " W. Slade & Co.

Tobacco Curing Apparatus—Bibb & Co.

Harvester Knife Grinder—Stevenson Man'g Co.

Drain Pipe and Tiles—H. Gibson and American Farmer

Business Agency.

Langstroth's Bee Hives—Richard Colvin.

Howe Sewing Machine—J. F. McKenney & Co.

Self sealing Fruit Jars—A. J. Weidener.

Tonic Syrups—J. Jacob Smith.

Tobacco, Snuff and Segars—Jno. T. Hanneman.

" " Fr. Mueller.

Shamberg House—F. H. O'Connor.

New Book—Agents Wanted—National Publishing Co.

Rhodes' Superphosphate—B. M. Rhodes & Co.

Contents of May Number.

Work for the Month.....	321
The Vegetable Garden.....	323
The Fruit Garden.....	324
The Flower Garden.....	324
Cheese Making—its Flavor.....	324
An Essay on Colic and Bots in Horses (continued).....	325
Horse Breaking and Horse Sense.....	327
"Restitution".....	328
Raising Turkeys.....	329
Drainage—Practically understood by few; Theoretically, by all.....	330
Hop Growing Second Season.....	332
New Material for Paper.....	334
The Profitableness of Small Fruit Culture.....	334
Profit of Apple Growing.....	336
Astronomical Movements of Plants.....	336
"Back to the Land".....	337
Gapes in Chickens.....	337
Subscriptions.....	338
Superintendent of Agriculture and Immigration.....	338
A Word to Friends.....	338
Japan Spring Wheat.....	338
Mr Joseph Harris.....	339
A Word for Young Men.....	339
"A Fair appointed by Act of Assembly".....	340
Artichokes.....	340
Book Table.....	341
Cultivation of Small Grain.....	342
Remarks on a New Mode of Curing Tobacco.....	342
The Busy Bee near Boston.....	345
How to Learn Rational Farming.....	346
Lice on Cattle and Sheep.....	347
Embryological History of Oysters.....	347
Artificial Water and Food for Oysters.....	348
The Crow.....	348
Seeding Down Often.....	349
The Preservation of Leather.....	350
Publication of the Reports.....	350
Sunday Reading.....	351